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THESIS

**IMPACT OF RETIREMENT CHOICES OF EARLY
CAREER MARINES: A CHOICE ANALYSIS MODEL**

by

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March 2013

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ABSTRACT

This thesis will analyze the potential impact of Marine Corps junior officer/enlisted retention if changes are implemented to the military retirement system. The research will be conducted using a discrete choice analysis methodology that is often used to differentiate factors that lead to decisions. Using an online survey, we will ask Marines within their first term of enlistment or contractual obligations to imagine themselves at the end of a contractual period and to make a choice between two proposed future career benefit packages. Each participant will be asked to make a choice between several sets of future career benefit packages. Through the use of multi-nominal logistic regression, we will identify the level of impact on retention decisions after the subjects choose differing attributes of a career package, which include retirement alternatives. Once data are collected through the survey, we will be able to predict the outcome of different retirement alternatives with a certain level of confidence.

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LIST OF ACRONYMS AND ABBREVIATIONS

CHR	Cornell Hospitality Report
CNA	Center for Naval Analyses
CNO	Chief of Naval Operations
COA	Course of Action
DBB	Defense Business Board
DoD	Department of Defense
GEV	Generalized Extreme Value
M&RA	Manpower and Reserve Affairs
NPS	Naval Postgraduate School
NPV	Net Present Value
OCO	Overseas Contingency Operations
OSD	Office of the Secretary of Defense
QRMC	Quadrennial Review of Military Compensation
TA	Tuition Assistance
TSP	Thrift Savings Plan
VNCO	Vice Chief of Naval Operations

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Captain Aaron Masaitis:

All my efforts, work and recognition are a result of my beautiful wife and best-friend, Natasha, and our children. They have continuously encouraged me to be a person of humility, integrity and meekness for the Glory of Christ who lives within and transforms me daily. Gal 2:20

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I. INTRODUCTION

A. BACKGROUND

The United States is facing a looming fiscal crisis due to many factors, but one significant reason is the progressive increase in mandatory entitlement spending. With the potential of massive cuts to these programs the Department of Defense (DoD) is considering a reduction in spending to the military retirement system. Studies of changes to the military retirement system have been conducted with the purpose of analyzing cost reduction, but Congress is concerned that recruitment and retention could be affected if the perceived value of retirement is impacted.

As a nation that has a standing professional military, the United States has used a retirement system as an incentive package to compensate those who serve. Since the military typically does not pay the same compensation as the private sector for comparable jobs, it is vital to retain qualified, trained and experienced personnel for sustainability. Spending 5, 10, 20 or even 30 years servicing one's country with the promise of a retirement package helps retain quality members in the military. To further study the proposed changes to the military retirement system, the Chief of Naval Operations (CNO) has tasked the Naval Postgraduate School (NPS) to study proposed changes to the military retirement system.

In studying the current, proposed and other systems, NPS will then be able to provide detailed recommendations to senior DoD leadership on the benefits and risks. Ultimate changes to the 50-year-old system will have far-reaching effects, but in our analysis, it will be clear that changes are needed as the force has shifted its desire to have a retirement plan with choice factors that meet many individual needs.

B. PURPOSE

This thesis will analyze the impacts of various proposed military retirement system changes to a Marine's decision of retention or separation at different positions in their service. In taking this approach, our research has not eliminated any demographic of the Marine Corps and embraced a wide range of opinions and decisions that impact various retirement aspirations.

This thesis reviews the military's benefit package as it is today, and then proposes alternate options for the subjects to assess that are able to be analyzed through regression. In doing this, we discuss the theory of choice analysis and its importance in the study of retention choices of active duty

Marines. The results of this research will provide leaders that are considering changes with information about the career benefits most valued by Marines.

Our expectation is that senior leadership within the DoD will take this information and form a well-based determination of a fair retirement compensation package. If lawmakers utilize the findings and recommendations found in this study when changing the military benefits package, military members will be more adequately cared for and be given more opportunity to provide for themselves throughout their lives.

C. QUESTIONS

This research will address the following questions:

- 1) What factors drive retention, career designation and retirement within the Marine Corps for Marines at different levels of service?
- 2) Do equitable career benefits packages impact first-term Marines' decisions to separate or further their careers?
- 3) What are the predicted effects to the Marine Corps if there is a change to the career benefits compensation package?

D. METHODOLOGY

The method that our team determined best to meet our objective is to collect data through a survey tool utilizing the choice analysis approach. Choice analysis is a statistical procedure that analyzes choices made using a finite set of alternatives. A survey was designed with specific questions that allow us to collect the correct data set surrounding perceived compensation packages. In executing this approach, statistical models will produce results that will assist us in determining the factors that an individual considers when deciding to retain in the military (toward retirement) or separate.

Participants of the survey will be asked to make a choice between several sets of hypothetical future states of career benefit packages that portray varying benefit attributes including proposed retirement changes. Each participant will choose between several hypothetical sets of future career benefit packages. Through the use of advanced multivariate statistical analysis, we will estimate the utility that different aspects of a career package play in retention. Resulting information from these sets of choice attributes will be our supporting evidence to estimate the long- and short-term impacts on retention/retirement.

E. LIMITS OF RESEARCH

The military's promise of a pension after 20 years of dedicated service has always been a key element noted by service members as a reason they choose to retain and ultimately retire. This is critical to understand by DoD leadership and our elected officials. What choices and underlying issues that drive an individual to come to such a decision is paramount; however, not all factors can be addressed in a single study or survey. We are unable to assess possible changes to conditions that may affect survey responses in the time period that the survey is available for data collection. Examples of this are changes to monetary compensation, other non-monetary benefits and retention rates during the drawdown of forces in support of Overseas Contingency Operations (OCO).

It is important to note that the military retirement system is designed to provide services not only to active duty retirees, but also to reservists, disabled veterans and eligible survivors of deceased retirees. Our study focuses only on the active duty component of military retirement and does not include data from disabled or reservists.

Despite the research, time and dedication that our team puts into this project, we realize that notable discoveries may not be definitive. We also realize that an individual's choice factor or attribute may or may not affect the individual's personal choice to retire. Finally, we also realize that senior Marine Corps leadership may not accept our conclusions.

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II. LITERATURE REVIEW

A. OVERVIEW

Retirements costs for the U.S. military have increased by 63 percent over the past 10 years, and numerous studies have been conducted on military retirement reform as a result (Department of Defense, 2008). The rapid increase in military retirement expenditures was primarily due to increasing health costs and the overall size of the retiring force. More recently, reform for military retirement has become a popular topic on Capitol Hill after the Budget Control Act of 2011 prescribed a \$500B cut in defense spending. Commissions tasked with proposing changes within the military retirement system have struggled with determining how military retirement reform can occur while attracting and maintaining a quality all volunteer force. A major fault in these studies is the lack of interest in what attracts members to the military and what shapes their desire to stay until retirement. We believe that we can help identify what compensation benefits are important to military members by studying choices made through a choice analysis model and regression analysis. In order to accomplish this, we will first review the current military retirement system, then its proposed changes, and finally literature written about previous choice analysis studies.

B. CURRENT MILITARY RETIREMENT SYSTEM

The current military retirement program, created in 1948, is a compensation system that includes both monetary and non-monetary compensation that was created in 1948. This post WWII system was created with the intent of providing an incentive for senior military members to retire after 20 years of service. Congress passed the retirement reform with the belief that most military members would still want to stay in the military until their 30-year mark and receive 75 percent of their base pay (Department of Defense, 2008). The payout portion of the retirement system comprises nearly half of the system's expense. Once a military member retires with 20 years of service the member will immediately receive a monthly annuity for the rest of his life. The annuity is calculated with a simple formula of 2.5 percent multiplied by each year of service.

Years of service	10	15	20	21	22	23	24	25	30	35	40	41
Final Pay	25%	37.5%	50%	52½%	55%	57½%	60%	62½%	75%	87.5%	100%	102½%
High-36	25%	37.5%	50%	52½%	55%	57½%	60%	62½%	75%	87.5%	100%	102½%
REDUX*	N/A	N/A	40%	43½%	47%	50½%	54%	57½%	75%	87.5%	100%	102½%

Table 1. Retired Pay Multiplier Table (From Under Secretary of Defense, Personnel and Readiness, 2012)

Another concern during the 1940s that drove Congress to change the retirement system was the belief that knowledge and experience gained from military service was not easily transferred to the civilian sector. The Defense Business Board (DBB) says that “the system was designed in an era when life spans were shorter, draft era pay was substantially less than civilian sector pay, second careers were less common, and skills acquired during military service were not transferrable to the private sector” (Defense Business Board, 2011, p. 2). This finding by the DBB identified the progressive shift in transferrable skills gained by military service, which now provides an easy transition to a second career within the civilian workforce.

Currently, the annual retirement system payouts have grown to an expense that costs \$52.2 billion, or seven percent of the annual department of defense budget (Department of Defense, 2008). Monetary retirement compensation now accounts for nearly half of the expense within the retirement system.

Military Retirement Trust Fund Under Current Plan



Figure 1. Military Retirement Trust Fund Chart (From OSD Office of Actuary, 2012)

Non-monetary compensation includes medical coverage, education and quality of life benefits that are free to the retiree for the remainder of the member's life. Expected annual increases in cash benefits and health care will continue to drive the cost of military retirement unless the system is changed.

Since 1948, the "redux" and "High-3" plans have been implemented to reduce the downward pressure caused by increasing costs, but the system has still remained a ¹defined benefit type of compensation. In September 1980, Congress implemented the FY 1981 National Defense Authorization Act that required retirement compensation pay to be based off of the member's average pay from the last three years of service. Again, in 1986, Congress enacted the redux plan, which provided an option for active duty members to receive a lump sum of \$30,000 at the 15-year mark. In exchange, the military member would be required to complete 20 years of active duty and receive a

¹ A predetermined retirement compensation annuity specified by the employer.

slight decrease in retirement pay. This plan was popular in the 1980s, when the plan was first implemented, but the cash amount has remained \$30,000 and is less attractive due to inflation of the dollar.

C. PROPOSED CHANGES TO MILITARY RETIREMENT

Since the current military retirement system's inception, Congress and the DoD have conducted several studies and research surveys to determine the most appropriate way to change and update the military's retirement system (i.e., the Quadrennial Review of Military Compensation).

The studies that we chose to review propose many changes. Some of those proposals include modifying the current required 20 years of service before retirement eligibility to an increased 30 years of service, except for combat personnel. Another recommendation posed a change from a salary-based pay system to a more incentivized pay compensation plan, and a three-part mandatory retirement plan. Other recommendations were previously proposed, but change has not occurred due to the sensitivity of the topic within Congress and other elected officials. Sensitivities toward the study are not only politically driven, but the studies were hinting the possibility that changes could dis-incentivize the military and have a negative effect on recruiting and retention. A quote from one study goes on to say that implementation of certain recommendations could potentially lead to an immediate "unacceptable degradation of middle and senior management, in terms of both numbers and quality" (The Library of Congress, 2007, p. 9). We will explore some of the recent reviews and proposals in more detail:

1. The Tenth Quadrennial Review of Military Compensation

The Tenth Quadrennial Review of Military Compensation (QRMC) is a report created for the President of the United States under federal law (Department of Defense, 2008). The QRMC report was initially created in 1965 for the purpose of "a complete review of the principles and concepts of the compensation system for members of the uniformed services" (Department of Defense, 2008, Preface). The intent of the report is to ensure that funds collected from taxpayers and subsequently spent on the military, are spent most conservatively and efficiently while maintaining highly qualified personnel. The report is published to the President every four years, with the most recent report being this report, the tenth version, printed in 2009.

The report started its position by identifying the military compensation system as a complex package of cash, deferred, and noncash benefits. It also explains statistics relating to the expense of the military retirement system in both monetary and non-monetary terms. The report also discusses how it finds the current system as inequitable, inflexible and inefficient. It is inequitable to those unable to

take advantage of any retirement benefit before 20 years in service, inflexible to the intra-service personnel planners due to their unwillingness to release personnel near their 20 year retirement mark, and inefficient as deferred compensation that costs more to the Government than its actual value.

The report finally discusses its recommended changes to the military retirement system. Those changes include; delaying the defined contribution portion of retirement to 60 years of age, creating a defined contribution, by which the Government pays 5 percent to a 401k type personal retirement fund, gate pays which payments are given to military members at milestones within their career, and finally separation pay.

2. Defense Business Board

With budget restrictions at the forefront of executive leaders' minds, the Secretary of Defense tasked the DBB with further investigating feasible options to reduce the cost of the military retirement system in May 2010 (Defense Business Board, 2011). The DBB then created a Task Force called the "Military Retirement-Alternative Plans" Task Group. The Task Group gathered data by interviewing senior leadership, officials and academics and reviewed proposals from previous military retirement working groups within the DoD. Once the data were analyzed, the Task Group created a report and presented their findings in the summer of 2011. The report will be used within this thesis in order to identify and cite recent military retirement reform proposals and findings.

The Task Group presented many findings within their report that are similar to the findings presented to the President by the QRMC. The Task Group identified the current military retirement system as unfair due to the fact that the only population able to take advantage of retirement is those that complete 20 years in service. The report also addresses the limited flexibility of the current system and how qualitative changes can have a great impact on its flexibility while reducing cost and possibly increasing attractiveness. Lastly, the Group found the current system to be unaffordable and increasingly unsustainable.

The Task Group's intent was to deliver sustainable recommendations that will enable the retirement system to be fiscally achievable, while recruiting and retaining the highest quality personnel. Unfortunately, the board did not survey active duty personnel, although they recognized the importance of retirement benefits to maintaining and recruiting an all-volunteer force. The Task Group recommended a change to both the monetary and non-monetary benefits package. Monetary benefits would be provided through a defined contribution controlled by 401k type retirement accounts. The Task Group also recommended reducing non-monetary benefits by increasing health co-pays and

reducing access to other non-monetary benefits. The Task Group also stated that military retirement pay is comparatively better than the private sector.

When the study was published, the response from the operating forces was negative, as the board seemed to take away everything that members view as important. The report states that an individual receives 40 years of retirement pay for only 20 years of service, but what is neglected in the verbiage is what costs are endured by Marines and other members during service – hardship, deployment and family separation.

3. CNA Report

Anticipating a sweeping change to the DoD budget and military retirement system, the Vice Chief of Naval Operations (VNCO) tasked the Center for Naval Analyses (CNA) to study the retirement reform proposals developed by the Office of the Secretary of Defense (OSD) and examine how potential changes to the military retirement system could affect Navy costs and personnel (Grefer, Phillips, & Shuford, 2012). The CNA report was created as a response to the DBB report mentioned earlier. The CNA designed the model used within the report to predict changes in retention once changes to the retirement system are implemented. The model is also designed with flexibility so that data can be changed within the scenario to predict short term, or long-term effects on retention. The report is solely designed to anticipate the greatest cost savings to the Navy by modeling the value of retirement in terms of Net Present Value (NPV) against anticipated changes to the retirement system.

D. CHOICE ANALYSIS LITERATURE

Choice analysis is the study of the psychological stimuli of utility-maximizing behavior by the decision maker. The choice analysis model is derived by analyzing differing stimuli that are provided by the decision maker after a series of questions are asked in the form of factors and attributes. To our knowledge, choice analysis has not been used to study what choices drive a potential recruit to join the United States military, or retire once on active duty. We will utilize discrete choice analysis as a tool to better understand what truly is important to active duty Marines, and create a unique perspective that will be useful to senior decision-makers within the Marine Corps. The following are literature that we will use to help guide our research:

1. “Discrete Choice Methods with Simulation” (Second Edition)

This book was written with the intent of defining the new generation of discrete choice methods (Train, 2009). Dr. Train has written over 60 articles and 3 books on economic theory and qualitative

choice analysis. This version introduces advanced modeling theory including logit, Generalized Extreme Value (GEV), probit and mixed logit. The models described in this book will assist the thesis greatly as a reference for advanced formulas and discrete choice framework. The frameworks discussed in this book help ensure that the data collected fits within the required characteristics. Characteristics of the choice set must be mutually exclusive, exhaustive and finite. This book defines the characteristics in great detail to ensure that the survey instrument is efficient and the survey instrument can correctly collect the data.

2. “Unlocking the Secrets of Customers’ Choices”

The Cornell Hospitality Report (CHR) released a journal called “Unlocking the Secrets of Customers’ Choices” that was written with the intent of designing and evaluating product and service bundles for food-service and lodging businesses (Verma, 2007). The customer choice modeling used in this study shows how different market segments react to features offered by businesses. The report is interesting because it is designed to maximize profit by ensuring that customers are attracted to businesses by being provided the most utility in their decision making process. The hospitality and service industry requires that customer’s preferences are attended to on a daily basis, which differs greatly from military compensation, but can be useful if lessons learned from the hospitality industry are applied to military benefits packages. Before choice analysis was applied to the hospitality industry, customer satisfaction was normally determined through surveys. These surveys had limited accuracy because of the respondent’s lack of interest in the survey and subsequent speed that the respondents would complete the survey with little regard to the quality of their answers. This CHR report aims to provide details of the successful application of choice analysis in two real life scenarios. The details also identify what drives the customer’s willingness to pay in each scenario.

3. “Predicting Customer Choice in Services Using Discrete Choice Analysis”

The IBM systems journal released a paper describing the execution of discrete choice studies for the customer service industry (Verma, 2008). Several examples are used within this paper showing the benefit of using choice analysis when studying the needs and preferences of service customers. This paper is valuable to the thesis because it introduces the concept that customers do not have a propensity to spend money on a product, but the propensity lies within the utility that the product provides to the customer. Also discussed in this journal is the possibility of combining choice modeling results with econometric models making an interrelated managerial decision making simulation with the intent of triangulating results and developing a deeper understanding of customer’s choices. These discussions

are valuable for this thesis by providing a deeper understanding of multiple model integration and the caution required to isolate statistical differences.

4. Employee Choice Modeling: predicting Employee Behavior under Varied Employment Conditions

This article discusses employee choice modeling and uses an example of its application with the Australian Army (Jans, Frazer-Jans, & Louviere, 2001). The Army conducted research in order to modify its employment system from a long-term job security system to something more flexible. The research was conducted to answer four questions that ranged from acceptable alternatives, moral acceptance of change, occupational vs. institutional culture, and acceptable compensation. The survey was conducted throughout the Army by trained survey coordination Officers. The features and attributes were created after reviewing previous studies and by incorporating recommendations from focus groups. Once the data was collected, an ordered probit model was created and analyzed. The results found that a specific set of factors and attributes, on average, was favored by all ranks. Two major factors that were highest throughout the survey were job satisfaction and promotion expectations. Although the results were successful in determining which package was most favored, the Australian Army has not incorporated the change since the other branches of the armed forces have not conducted a similar study.

E. SUMMARY

In summary, the cost and benefits associated with military retirement have been extensively researched. The reports used within this thesis have been chosen because of their recent results and recommendations, along with the applicability to the study of this thesis. To our knowledge, discrete choice theory has not been used to analyze the true utility from an active duty member's perspective, so careful consideration was given when choosing which materials to use for this thesis.

III. METHODOLOGY

A. OVERVIEW

As we projected, possible outcomes of the hypothesis in this study, our team felt that these projections would need to be influential to senior Marine leadership, thus we determined conducting a survey was the best method for achieving such results. Administering a survey will produce the most realistic and unbiased results as participants consider a retirement compensation package that is equitable to their needs. The question on choices that drive an individual's resolution to retain, separate or ultimately retire from the Marines or any other branch of service is an approach that we believe has not been considered in past research. Regardless of previous studies and derived conclusions, the methods that were utilized did not seem to be tailored towards a service member's utility, but rather the needs of the DoD hence the results were one-sided.

To qualify as participants in our study, each volunteer was required to be an active Marine and have access to the Internet for connectivity. The duration of the survey was approximately 10-15 minutes, and volunteers were required to answer a series of questions that eventually produced a choice model for overall statistical data. Our team used precautions to ensure that survey volunteers were free of influence by any higher authority. We wanted a volunteer population whose desire was to have a positive impact on any future changes to compensation packages, not to satisfy senior leadership.

Anticipated benefits from this study are that senior Marine and DoD and other possible decision makers will better understand the choices that their troops make, why, and how those factors could impact retention. Table 2 outlines choice attributes and factors that our team developed for the survey.

Choice Factors	Attribute 1	Attribute 2	Attribute 3	Attribute 4 (if applicable)
Retirement Pay	no retirement pension	10% of base pay	20% of base pay	30% of base pay
Thrift Savings Plan / 401k	no government contribution	3% of base pay contributed in addition to pay	5% of base pay contributed in addition to pay	7% of base pay contributed in addition to pay
Continuation Bonus (at 15 YOS)	no continuation base pay	3 months of base pay	9 months of base pay	18 months of base pay
Retirement Separations Pay	no separation pay	1 year of base pay	2 year of base pay	3 year of base pay
Retirement Medical Benefits	no co-pay	5% co-pay for all service members and dependents	10% co-pay for all service members and dependents	15% co-pay for all service members and dependents
Retirement Insurance Co-Pay Cap	no co-pay cap	\$1,500 co-pay cap annually	\$2,500 co-pay cap annually	\$3,500 co-pay cap annually
Active, Duty Station Choice	no choice of future duty stations	choice of some future duty stations	choice of all future duty stations	none
Active, Tuition Assistance	up to \$3000 a year	up to \$4500 a year	up to \$6000 a year	none
Active, Basic Housing Allowance	BAH 10% lower than local cost of living	BAH matches local cost of living	BAH 10% higher than local cost of living	none
Active, Future Pay Raises	lower than civilian wage pay raises	the same as civilian wage pay raises	higher than civilian wage pay raises	none
Civilian Job equitability (education / experience)	10% lower than equivalent civilian jobs	the same as equivalent civilian jobs	10% higher than equivalent civilian jobs	none

Table 2. Choice Attributes and Factors

As participants chose from the predetermined choice factors, which were in the form of a question, subsequent interrogations were then posed. As the member selected the attributes that were most desirable to them, the survey applied advanced statistical inferences to derive the member's optimal utility of a compensation package.

Table 2 is an example of how the choice analysis questions were presented to our volunteers for a decision. A glossary and index were provided to the participants to clarify any topics or words that could have been confusing or misleading.



Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented." [Click here to see the definition of some terms.](#)

	Concept 1	Concept 2	
Retirement Payment	50% of base pay	No retirement pension	
Thrift Savings Plan / 401k	7% of base pay contributed in addition to pay	No government contribution	
Continuation Bonus at 15 Years of Service	18 months of base pay	9 months of base pay	
Separation Pay	3 years of base pay	2 years of base pay	
Medical after military retirement	5% Co-Pay for all servicemembers and dependents	No co-pay	
Post retirement insurance co-pay cap	\$2,500 co-pay cap annually	No co-pay	
Choice of duty stations	Choice of all future duty stations	Choice of some future duty stations	
Tuition Assistance	Up to \$6,500 a year	Up to \$10,500 a year	
Basic Allowance for Housing	BAH 10% higher than local cost of living	BAH 10% lower than local cost of living	
Future pay raises	The same as civilian wage pay raises	Lower than civilian wage pay raises	
Pay compared to civilian jobs requiring same level of experience and education	The same as civilian jobs	Lower than civilian jobs	

I would choose
Concept 1

I would choose
Concept 2

Neither

Figure 2. Example of Choice Analysis Survey

B. DATA COLLECTION

The survey instrument was utilized in order to obtain a representative sample of the Marine Corps total population to estimate choice factors that are important to the entire service. For statistical significance, samples of more than 100 volunteers were needed, but our goal was to have anywhere from 500–1,000 members participate. Collection of the web-based data were executed on a secure NPS server in order to ensure DoD security compliance and ease of access. The endorsement and approval for collecting a large and impartial population was received from Headquarters Marine Corps, Manpower and Reserve Affairs (M&RA). The endorsement from M&RA was critically important to support the research to ensure the publication and dissemination of results and possible utilization for manpower requirements throughout the Corps.

There are three broad steps in collecting this type of data. First, a list of choice factors that we felt influenced a customer's choice was compiled. Then, those drivers were outlined differently in order for the choice factors to form inferences (Verma, 2008). For this thesis, we used general attributes that were recommended by previous retirement reform working groups with only slight

modifications and assumptions. Once the list of choice drivers was finalized, experimental design techniques are used to develop many realistic versions of service offerings by systematically creating orthogonally distinct combinations of the drivers. Finally, choice experiments were constructed that asked respondents to select one out of two options available to them in a series of choice sets.

The choice sets that were used within the survey were chosen by experimental design principles in order to ensure that all levels of attributes were utilized, as required in orthogonal design. Within the survey, the participant was asked to choose which group of attributes they liked. Each question was repeated with a different set of choices after attributes were shifted with a different combination of level within each attribute.

C. CHOICE ANALYSIS MODELING

The choice analysis method of data analysis is an experimental design methodology. The reasons that people make choices are very complex, but theorists believe that very few attributes of these choices are used when making a decision. The choice analysis method quantifies a weight that a population puts on attributes for a specific choice. These and other techniques are all quantitative tools that assess drivers that are believed to be essential in each member's decision (Verma, 2007). Great care is required when applying these procedures in order to ensure that all determinants are identified, expressed and understood by the participants of the survey.

By executing the discrete-modeling approach, we will apply the attributes of choices between options that are less cohesive but most influential to the individual. This method is very subtle and not recognizable to the volunteer, but the data that the survey collects is contributory in the understanding of achieving maximum utility.

D. REGRESSION ANALYSIS

Regression analysis is a statistical tool designed at determining the relationship strength between independent and dependent variables. Our approach was one of a multinomial basis where data was collected from the survey with many independent variables, which were the choice factors. With this multinomial data we ran a regression model in order to determine which dependent variables (the attributes) were driving a member's decision. Once all the regression applications were analyzed and complete, we created a choice matrix that will predict the probability of a Marines choice of retention, separation and/or retirement and various combinations of choices for different subsets of the population.

E. SUMMARY

This chapter briefly discusses the method we used to collect and analyze the data to answer the primary research questions. In determining the best way to assist the Marine Corps in its military retirement reform research, we realized that choice analysis, to the best of our knowledge, had not been utilized. NPV and other cost-savings techniques had been researched, but those studies were in the effort of long-term cost savings. Because of this, we felt that choice analysis would be most beneficial to the Marine Corps.

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IV. DATA ANALYSIS

A. OVERVIEW

As we looked at the data and transformed it into information, our goal was to draw clear and concise conclusions. In doing this, our team made an effort to let the results speak for themselves without modification. This approach was one of objectivity to ensure that our own opinions and individual assumptions were not influencing the facts behind the numbers, whether for the betterment of service members or the DoD/government. Our reasoning behind this agreed upon approach was to negate possible emotions that may be present when one addresses the issue of compensation, retirement or benefits. An example of not applying this sentiment is seen in our Congress today as our elected officials have an extremely difficult time finding programs, resources, and other government platforms to cut. Whether military or civilian, the elements in this research are important to all thus we took an independent look at all the evidence before deriving conclusions.

It was also critically important to understand that the results in this chapter represent a sample of the active duty Marine Corps officer and enlisted population. This sample also represents Marines at every stage in their careers, and at different ages within those stages. Our team did not want to simply conduct a review from the bottom-line data so that we could form recommended courses of action (COA); we wanted a thorough analysis with a fair look at the numbers. Developing the COAs is important, but our team did not want to lose sight that real Marines took their time to volunteer for this survey and their choice took thought and consideration.

B. DESCRIPTION OF PARTICIPANTS

Participants of our study were diverse and represented every portion of active duty Marines. The total number of those that volunteered for our research was 1,421; however after close analysis six of those members' data had to be discarded due to inconsistencies in their rank, time in service, age and other factors. After removing the data points that were found unreasonable, our total sample size equaled 1,415. Figure 3 provides further details of our sample.

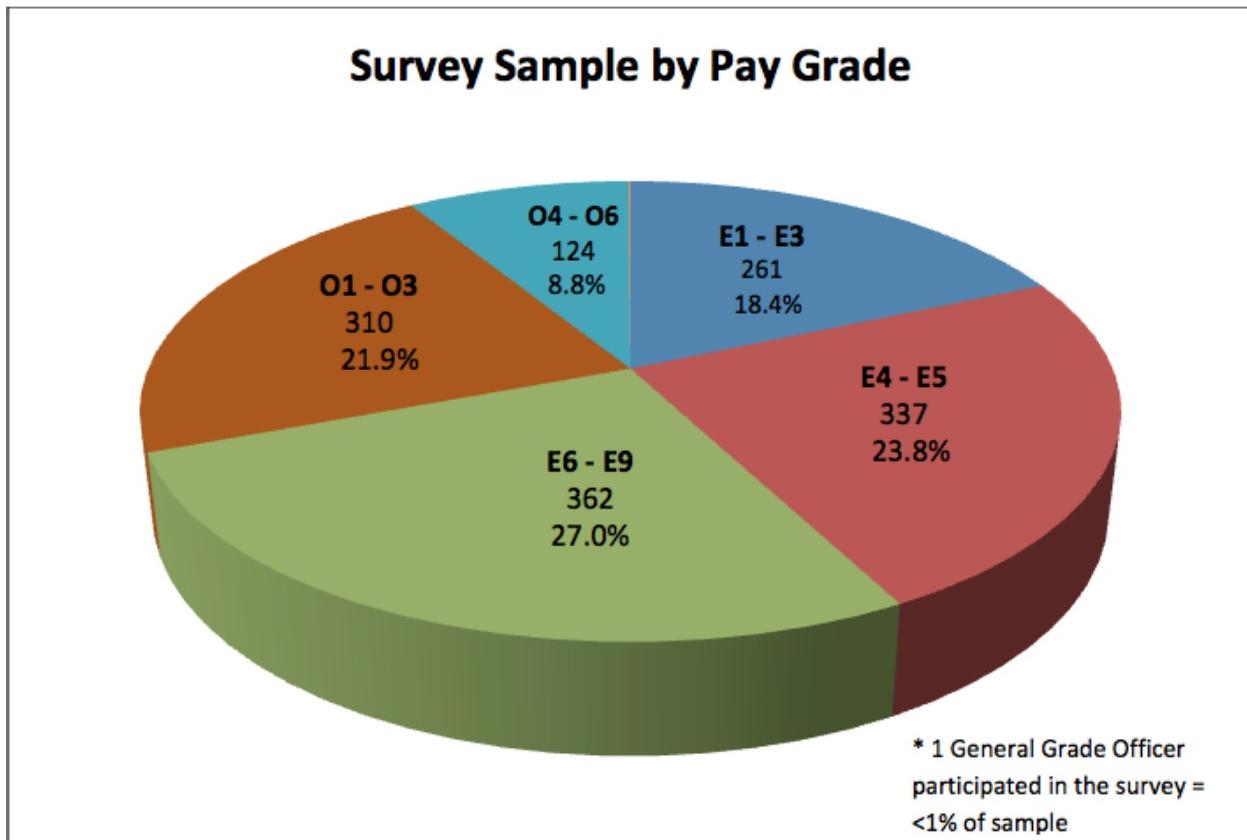


Figure 3. Survey Sample by Pay Grade

As Figure 3 depicts, both officers and enlisted personnel were represented from all pay grades. With this range of proportionality in the sample, we are confident that the results of the choices will embody the population as a whole. However, more importantly, we have a large and diversified enough sample to compare the results of groups with one another to understand differences in preferences across pay grades.

Marital Status of Participants

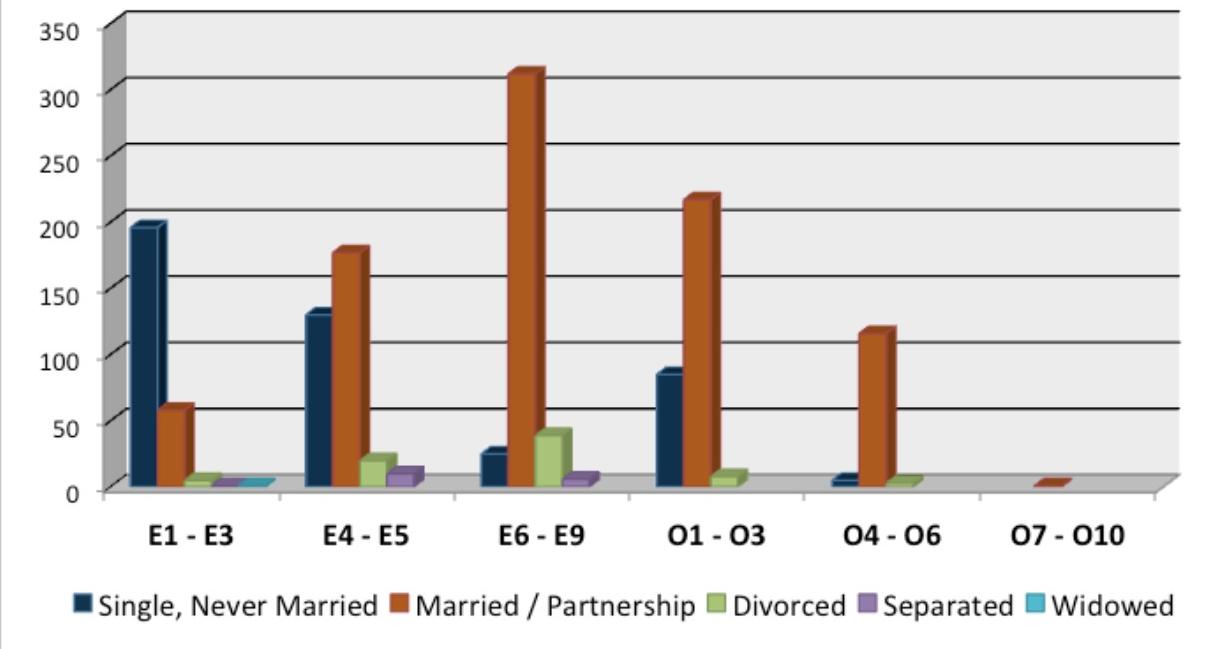


Figure 4. Marital Status of Participants

Figure 4 identifies that the samples taking our survey are mostly married Marines. When queried, our sample showed that 62.5 percent were married. This percentage of married respondents within our sample is what we would expect from the population in whole. Early career enlisted Marines in our sample are mostly single, but the possibility of Marines in our sample becoming married increases as they progress through the ranks. Officers in our sample are more likely to be married, even at their early career, due to the education requirement and subsequent older age upon commissioning.

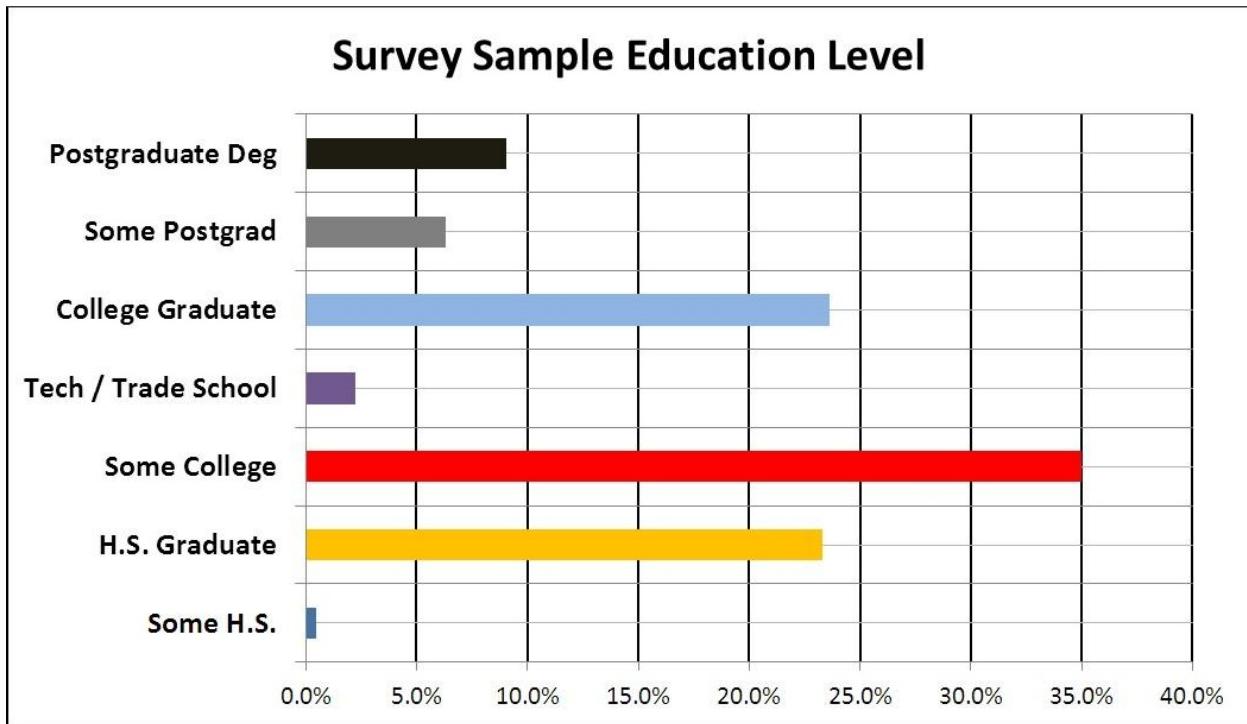


Figure 5. Survey Sample Education Level

Figure 5 provides a visual depiction of the level of education obtained by the respondents. The respondents were asked to provide the highest level of education that they have received. We found that 33 percent of the sample possesses a college degree, while approximately 42 percent have at least some college. These statistics are consistent with what we would expect from our population of Marines. These data further help explain that our sample is well diversified, unbiased, and sufficiently represents the population as a whole.

C. RESULTS

1. Concept Comparison

In the concept comparison portion of the survey, respondents were asked to choose between hypothetical military benefit concepts that were made up from the eleven factors that were discussed in Chapter three. Each choice set contained two concepts and respondents were asked to choose which concept they would prefer; if neither concept were appealing, respondents could select “neither.” Each concept contained all eleven factors with varying levels of attributes. The respondents saw a combination of six choice sets; choice analysis was used to ensure that each attribute was distributed utilizing an experimental factorial design. Each attribute of the factor in question was displayed an equal number of times throughout all experiments taken by the sample; this means that not all

participants saw the same six choice sets. The following figure is an example of a question posed in this portion of the survey utilizing a factorial design.

Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented." [Click here to see the definition of some terms.](#)

	<u>Concept 1</u>	<u>Concept 2</u>	
Retirement Payment	30% of base pay	No retirement pension	
Thrift Savings Plan / 401k	5% of base pay contributed in addition to pay	3% of base pay contributed in addition to pay	
Continuation Bonus at 15 Years of Service	No continuation base pay	18 months of base pay	
Separation Pay	No separation pay	1 year of base pay	
Medical after military retirement	10% Co-Pay for all servicemembers and dependents	5% Co-Pay for all servicemembers and dependents	
Post retirement insurance co-pay cap	\$2,500 co-pay cap annually	\$3,500 co-pay cap annually	
Choice of duty stations	No choice of future duty stations	Choice of some future duty stations	
Tuition Assistance	Up to \$10,500 a year	Up to \$6,500 a year	
Basic Allowance for Housing	BAH 10% higher than local cost of living	BAH 10% lower than local cost of living	
Future pay raises	The same as civilian wage pay raises	Higher than civilian wage pay raises	
Pay compared to civilian jobs requiring same level of experience and education	The same as civilian jobs	Lower than civilian jobs	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	I would choose Concept 1	I would choose Concept 2	Neither

Figure 6. Concept Comparison Survey Example

Theory behind this type of survey design suggests that it is normal for the respondent taking the survey to narrow in on only a few factors or attributes that are most important to the individual. This occurs because humans utilize a heuristic method when making choices between complex alternatives; we tend to focus on what is most important to us and easiest to use when comparing alternatives. In this way, the most important factor will reveal itself when faced with a number of choice sets to contemplate.

After the data collected, we calculated scores for the overall sample through multi-nominal regression. Coefficients were estimated individually for each of six different segments based on time in service and by enlisted or officer. We calculated the range of attribute utility for each factor; the greater the range within each result identified the higher amount of importance in making choices to each respondent. These ranges were then scaled to 100 providing a measure of average importance for

each factor for each segment. The data show that retirement is overwhelmingly most important for all segments, but there are considerable differences across segments, as we will show in the next section.

Average Importance by Segments (Enlisted)				
FACTOR	E1-9 with 0-4 years	E1-9 with 5-12 years	E1-9 with 13+ years	Overall Sample
Retirement Pay	27.91	37.09	44.60	37.78
Thrift Savings Plan / 401k	7.64	7.10	6.73	7.22
Continuation Bonus at 15 Years of Service	6.52	5.95	5.02	5.76
Separation Pay	6.58	6.02	5.34	5.84
Medical after military retirement	6.89	5.68	5.63	6.00
Post retirement insurance co-pay cap	6.93	6.08	5.65	6.04
Choice of duty stations	6.37	5.51	4.13	5.24
Tuition Assistance	6.81	4.97	3.63	4.88
Basic Allowance for Housing	7.09	6.44	6.02	6.54
Future pay raises	6.75	6.48	6.48	6.28
Pay compared to civilian jobs	10.50	8.68	6.77	8.43
TOTAL	100.00	100.00	100.00	100.00
Average Importance by Segments (Officer)				
FACTOR	O1-10 with 0-4 years	O1-10 with 5-12 years	O1-10 with 13+ years	Overall Sample
Retirement Pay	35.57	42.51	47.16	37.78
Thrift Savings Plan / 401k	7.88	7.42	6.75	7.22
Continuation Bonus at 15 Years of Service	6.15	5.49	4.91	5.76
Separation Pay	6.10	5.43	4.93	5.84
Medical after military retirement	6.17	5.66	5.34	6.00
Post retirement insurance co-pay cap	5.36	5.44	5.36	6.04
Choice of duty stations	5.69	4.99	3.96	5.24
Tuition Assistance	4.83	3.92	3.21	4.88
Basic Allowance for Housing	6.84	6.48	6.17	6.54
Future pay raises	5.85	5.37	5.66	6.28
Pay compared to civilian jobs	9.56	7.30	6.53	8.43
TOTAL	100.00	100.00	100.00	100.00

Table 3. Concept Comparison Average Importance by Segments

In order to more fully compare responses across the six different respondent segments, we standardized the data by dividing each segments score by the overall sample's score in each factor (row). In this conversion, each segments factor score is a percentage of the overall sample's score for that factor. This allows us to compare each segment's score to other segments' scores within each factor (but not across factors). Any number less than one means that the factor was less important and any number above one means the factor that was more important in comparison to the entire overall sample. The standardized data helps identify the differing level of importance for each row by viewing numbers higher/lower than one. The further the number is away from one, the more different the segment is from the overall sample for that specific factor. In the Table 4, we will be standardizing the data and charting the differences between the factors in order to identify the factors with the most disagreement across segments.

Sample percentage in comparison to the average mean (Enlisted)				
FACTORS	E1-9 with 0-4 years	E1-9 with 5-12 years	E1-9 with 13+ years	Range
Retirement Pay	0.74	0.98	1.18	0.44
Thrift Savings Plan / 401k	1.06	0.98	0.93	0.13
Continuation Bonus at 15 Years of Service	1.13	1.03	0.87	0.26
Separation Pay	1.13	1.03	0.91	0.21
Medical after military retirement	1.15	0.95	0.94	0.21
Post retirement insurance co-pay cap	1.15	1.01	0.94	0.21
Choice of duty stations	1.22	1.05	0.79	0.43
Tuition Assistance	1.40	1.02	0.74	0.65
Basic Allowance for Housing	1.08	0.98	0.92	0.16
Future pay raises	1.08	1.03	1.03	0.04
Pay compared to civilian jobs	1.25	1.03	0.80	0.44
Sample percentage in comparison to the average mean (Officer)				
FACTORS	O1-10 with 0-4 years	O1-10 with 5-12 years	O1-10 with 13+ years	Range
Retirement Pay	0.94	1.13	1.25	0.31
Thrift Savings Plan / 401k	1.09	1.03	0.94	0.16
Continuation Bonus at 15 Years of Service	1.07	0.95	0.85	0.21
Separation Pay	1.04	0.93	0.84	0.20
Medical after military retirement	1.03	0.94	0.89	0.14
Post retirement insurance co-pay cap	0.89	0.90	0.89	0.01
Choice of duty stations	1.09	0.95	0.76	0.33
Tuition Assistance	0.99	0.80	0.66	0.33
Basic Allowance for Housing	1.05	0.99	0.94	0.10
Future pay raises	0.93	0.86	0.90	0.08
Pay compared to civilian jobs	1.13	0.87	0.77	0.36

Table 4. Concept Comparison Sample Percentage

Table 4 identifies the first three columns as standardized data, while the right column identifies the range of standardized scores between the segments within each factor.

The first three columns show that the TSP is more important to junior Marines than it is to senior Marines. Junior enlisted found the TSP option to be 13 percent (1.06 vs. 0.93) more important than senior enlisted. Junior officers found the same TSP option to be nearly 16 percent (1.09 vs. 0.94) more important than did senior officers. The opposite trend is true about retirement pay for which senior enlisted and senior officers found it to be 44 percent (1.18 vs. 0.74) and 31 percent (1.25 vs. 0.94) more important than their junior counterparts.

When reviewing the highest level of differences within the data, we noticed that both officers and enlisted have the greatest disagreement between the same factors. The amount of disagreement between enlisted and officers differ some, but the highest differing factors are the same in both rank structures. Although we just discussed the retirement pay factor, it is also important to note that the junior vs. senior ranks have a high level of difference in percentages for this factor. The enlisted Marines found a differing standardized percentage of 0.44, while officers had a percentage of 0.31 for the same factor. Other factors that differed greatly between junior and senior Marines were choice of

duty stations, tuition assistance and pay when compared to civilian jobs. All of these factors had a higher percentage for junior Marines than senior Marines.

Min to Max Sample percentage ranges for Officer and Enlisted			
FACTORS	Range of Enlisted	Range of Officer	Range of All
Retirement Pay	0.44	0.31	0.51
Thrift Savings Plan / 401k	0.13	0.16	0.16
Continuation Bonus at 15 Years of Service	0.26	0.21	0.28
Separation Pay	0.21	0.20	0.28
Medical after military retirement	0.21	0.14	0.26
Post retirement insurance co-pay cap	0.21	0.01	0.26
Choice of duty stations	0.43	0.33	0.46
Tuition Assistance	0.65	0.33	0.74
Basic Allowance for Housing	0.16	0.10	0.16
Future pay raises	0.04	0.08	0.22
Pay compared to civilian jobs	0.44	0.36	0.47

Table 5. Concept Comparison Sample Ranges for all

In Table 5, the left two columns show the same ranges that were discussed previously from enlisted and officers. In the right column, we have provided range of separation for each factor for the entire sample across all six segments. We are now able to compare the differences between enlisted, officer and both combined. These measure of differences in the right column now show a greater range for all factors. The highest percentage of difference between the segments is now tuition assistance with 0.74. Retirement pay has the second highest range of difference with a percentage of 0.51. Pay compared to civilian jobs also has a high level of difference with a percentage of 0.47. Interesting as well is the range of future pay raises across all six segments; the ranges within enlisted (0.04) and officers (0.08) are fairly small indicating that within each there is very little disagreement between ranks. However, there is a larger degree of difference across officer vs enlisted as range across all six segment is much higher (0.22). The next couple figures graphically display this standardized data in order to help visually explain the variances between the measure of differences.

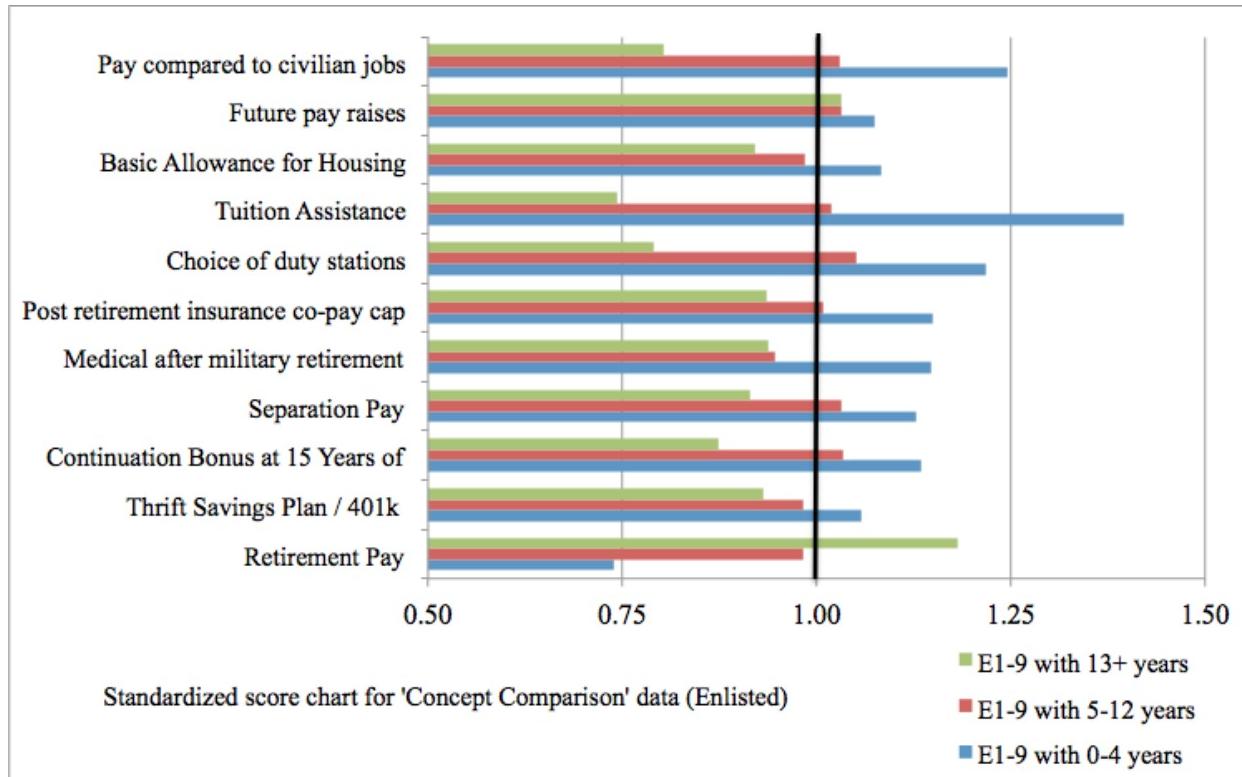


Figure 7. Concept Comparison Standardized Score Chart (Enlisted)

Figure 7 clearly shows the range of difference between junior and senior enlisted with tuition assistance, comparable pay to civilians, choice of duty stations, and medical after retirement. Figure 7 also helps identify that junior enlisted are less concerned with retirement than senior enlisted and how the TSP/401k is more important to junior enlisted than senior enlisted. The next figure graphically represents that standardized data for Marine officers.

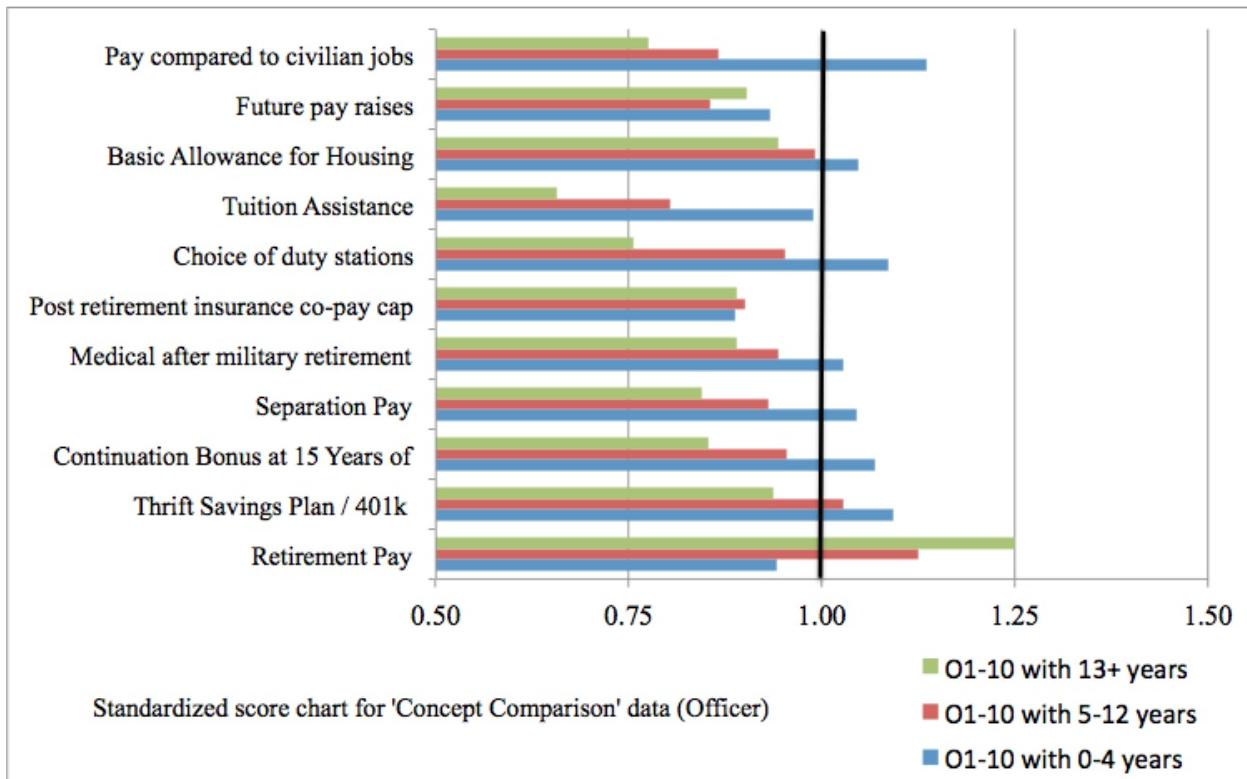


Figure 8. Concept Comparison Standardized Score Chart (Officer)

Figure 8 helps depict the high measure of difference that senior officers have towards post military retirement pay. Similarly to the enlisted chart shown in Figure 7, the junior officers consider TSP/401k plan more important do than senior officers. Comparing the officer to enlisted charts identify that officers have a much smaller interest in tuition assistance than enlisted. Additionally, all officers have low standardized (all less than 1) scores for future pay raises while enlisted all have higher (greater than 1) scores further demonstrating the difference across enlisted and officers for this factor.

2. Most/Least Attractive

In this section respondents were asked to identify which factor they considered the most attractive and the least attractive among a set of four factors. Each participant saw six of these sets of four factors, but not all participants saw the same six choice sets. The nine factors are as follows:

- Basic Allowance for Housing (BAH)
- Tuition assistance
- Continuation pay
- Free military health care for life
- Free spouse education

- Duty station/deployment preference
- 15-year retirement option
- Choice of a retirement ‘twilight’ duty station
- Government contribution to a 401k/TSP plan

These six sets contained similar factors as the concept comparison portion of the survey that was previously discussed in this chapter, but without the retirement factors. Just like the concept comparison design, each factor within the question was distributed in an orthogonally distinct manner using an experimental design. This ensured that each factor within the question was displayed an equal number of times throughout all experiments taken by the sample. For example, the factor ‘tuition assistance’ was used equally throughout all surveys and was paired equally with all other factors. The next figure is an example of a question.

Considering only the following military benefits, please indicate the one that is Most Attractive and the one that is Least Attractive to you.

Most Attractive		Least Attractive
<input type="radio"/>	Tuition Assistance	<input type="radio"/>
<input type="radio"/>	Government contributions to the Thrift Savings Plan	<input type="radio"/>
<input type="radio"/>	Duty Station and Deployment preference	<input type="radio"/>
<input type="radio"/>	Free spouse education	<input type="radio"/>

Figure 9. Most/Least Attractive Survey Sample

The results found within this portion of the survey determined which factor was most important to the respondents, but differed from the ‘Concept Comparison’ portion since each of the factors were not given attribute levels. The respondents were grouped into six categories and were separated by rank type and time in service. Although we were most interested in early career Marines, the remaining data was analyzed in order to conduct a full comparison.

Average importance by segments (Enlisted)				
FACTORS	E1-9 with 0-4 years	E1-9 with 5-12 years	E1-9 with 13+ years	Overall Sample
Basic Allowance for Housing (BAH)	19.10	19.34	10.46	19.51
Tuition Assistance	15.36	12.74	8.23	11.07
Continuation pay, aviation continuation pay, etc.	5.37	4.13	5.79	4.45
Free Military Health Care for life	24.10	23.69	8.70	24.44
Free spouse education	8.02	6.96	7.00	6.36
Duty Station and Deployment preference	12.09	9.96	25.95	10.70
15-year retirement option	8.31	10.92	2.78	8.96
Choice of a retirement, "Twilight" duty station	3.33	4.37	10.90	5.20
Government contributions to the Thrift Savings Plan	4.33	7.89	20.19	9.31
TOTAL	100	100	100	
Average importance by segments (Officer)				
FACTORS	O1-10 with 0-4 years	O1-10 with 5-12 years	O1-10 with 13+ years	Overall Sample
Basic Allowance for Housing (BAH)	19.48	18.48	20.87	19.51
Tuition Assistance	7.24	4.41	6.83	11.07
Continuation pay, aviation continuation pay, etc.	4.70	5.92	3.73	4.45
Free Military Health Care for life	23.37	23.49	25.82	24.44
Free spouse education	4.00	3.04	4.77	6.36
Duty Station and Deployment preference	16.24	11.60	8.75	10.70
15-year retirement option	8.76	13.31	7.81	8.96
Choice of a retirement, "Twilight" duty station	3.85	5.24	6.81	5.20
Government contributions to the Thrift Savings Plan	12.36	14.52	14.60	9.31
TOTAL	100	100	100	

Table 6. Most/Least Attractive Average Importance by Segments

The data shown in Table 6 that BAH and free military health care for life had a high utility for all segments except for the senior enlisted. Duty station and deployment location was found to be very important to senior enlisted and junior officers. Government contributions to the TSP had great importance to senior enlisted and mid-level to senior officers. Next, we will standardize the same data in order to show how segments within a factor compare to one another.

Sample percentage in comparison to the average mean (Enlisted)				
FACTORS	E1-9 with 0-4 years	E1-9 with 5-12 years	E1-9 with 13+ years	Range
Basic Allowance for Housing (BAH)	0.98	0.99	1.03	0.06
Tuition Assistance	1.39	1.15	0.99	0.40
Continuation pay, aviation continuation pay, etc.	1.20	0.93	0.62	0.58
Free Military Health Care for life	0.99	0.97	1.06	0.09
Free spouse education	1.26	1.10	1.10	0.17
Duty Station and Deployment preference	1.13	0.93	0.81	0.32
15-year retirement option	0.93	1.22	0.65	0.57
Choice of a retirement, "Twilight" duty station	0.64	0.84	1.58	0.94
Government contributions to the Thrift Savings Plan	0.47	0.85	1.12	0.66

Sample percentage in comparison to the average mean (Officer)				
FACTORS	O1-10 with 0-4 years	O1-10 with 5-12 years	O1-10 with 13+ years	Range
Basic Allowance for Housing (BAH)	1.33	1.56	1.57	0.24
Tuition Assistance	0.74	1.01	1.31	0.57
Continuation pay, aviation continuation pay, etc.	0.98	1.49	0.87	0.61
Free Military Health Care for life	1.52	1.08	0.82	0.70
Free spouse education	0.63	0.48	0.75	0.27
Duty Station and Deployment preference	0.96	0.96	1.06	0.10
15-year retirement option	1.05	1.33	0.84	0.49
Choice of a retirement, "Twilight" duty station	0.65	0.40	0.62	0.26
Government contributions to the Thrift Savings Plan	1.00	0.95	1.07	0.12

Table 7. Most/Least Attractive Sample Percentage

With the data now standardized, segments can be compared within each factor. In the three columns on the left, we are able to view the differences in utilities among segments. The numbers highlighted in yellow help identify the factors that had the highest range of differences. For example, junior and senior enlisted differed in their view of tuition assistance (1.39 vs. 0.99), while junior officers did not consider it important (0.74). BAH was found to be very important to all officers (1.33, 1.56, 1.57), but not to enlisted (0.98, 0.99, 1.03). This data also revealed that “continuation pay” was more important to mid-level officer (1.49) than to any other segment. Also, junior and senior officers differed greatly in their view of ‘free military health care for life’.

We also identified the ranges between factors in the right column in order to identify the factors that have the greatest difference across segments. In this particular analysis, we did not experience the enlisted and officer segments having the same high ranges between factors as we did during the concept comparison portion discussed earlier. The greatest range among enlisted is in continuation pay, choice of retirement location and government contributions to the TSP. The factor that differed the most was the ‘choice of a retirement ‘twilight’ duty station’ factor found within the enlisted segments. This factor differed by 0.94 as the junior enlisted percentage level was 0.64, while the senior enlisted

percentage was 1.58. The greatest range among officers is in tuition assistance, continuation pay and free military health care for life. Table 8 depicts the measure of differences from the overall sample.

Sample percentage ranges for Enlisted and Officer			
FACTORS	Range of Enlisted	Range of Officer	Range of All
Basic Allowance for Housing (BAH)	0.06	0.24	0.59
Tuition Assistance	0.40	0.57	0.65
Continuation pay, aviation continuation pay, etc.	0.58	0.61	0.86
Free Military Health Care for life	0.09	0.70	0.70
Free spouse education	0.17	0.27	0.78
Duty Station and Deployment preference	0.32	0.10	0.32
15-year retirement option	0.57	0.49	0.68
Choice of a retirement, “Twilight” duty station	0.94	0.26	1.18
Government contributions to the Thrift Savings Plan	0.66	0.12	0.66

Table 8. Most/Least Attractive Sample Ranges for all

In Table 8, the left two columns show the same ranges that were discussed previously from enlisted and officers. In the right column, we have provided range of separation for each factor for the entire sample. We are now able to compare the differences between enlisted, officer and both combined. These measure of differences in the right column now show a greater range for all factors. The highest percentage of difference between the segments is now the choice of a retirement, ‘twilight’ duty station with a range of difference percentage of 1.18. Continuation pay has the second highest range of difference with a percentage of 0.86. Free education for spouses also has a high level of difference with a percentage of 0.78. The next figure utilizes standardized data in order to help visually explain the variances between the measure of differences for enlisted Marines.

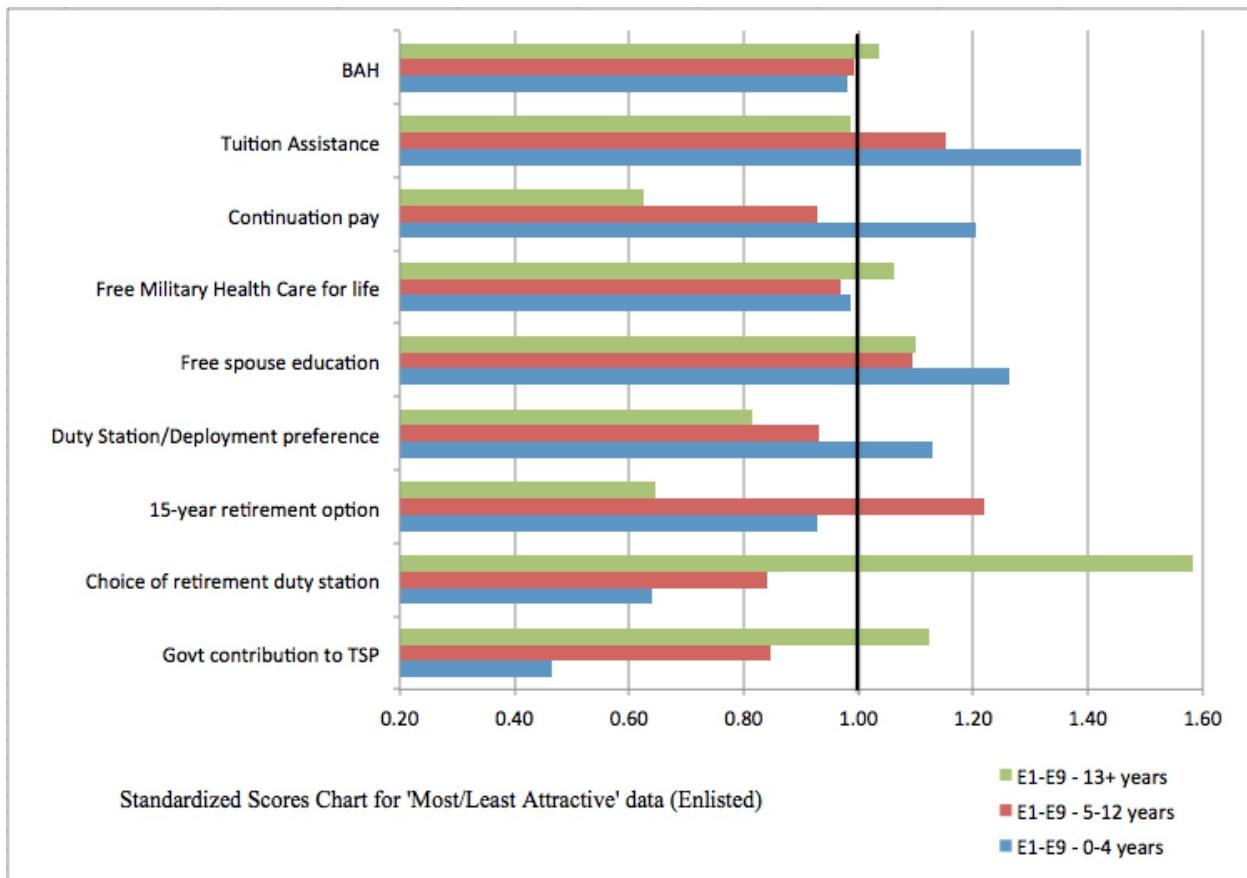


Figure 10. Most/Least Attractive Standardized Scores Chart (Enlisted)

With the data in graph format, it is easier to visually depict the range of responses found by enlisted in the 'choice of retirement duty station' factor. Also found within the graph is the difference between the senior and junior enlisted towards the TSP/401k retirement savings plan. Another interesting story within the chart is the amount of difference found in the 15-year retirement plan by those in the five to twelve year time in service segment.

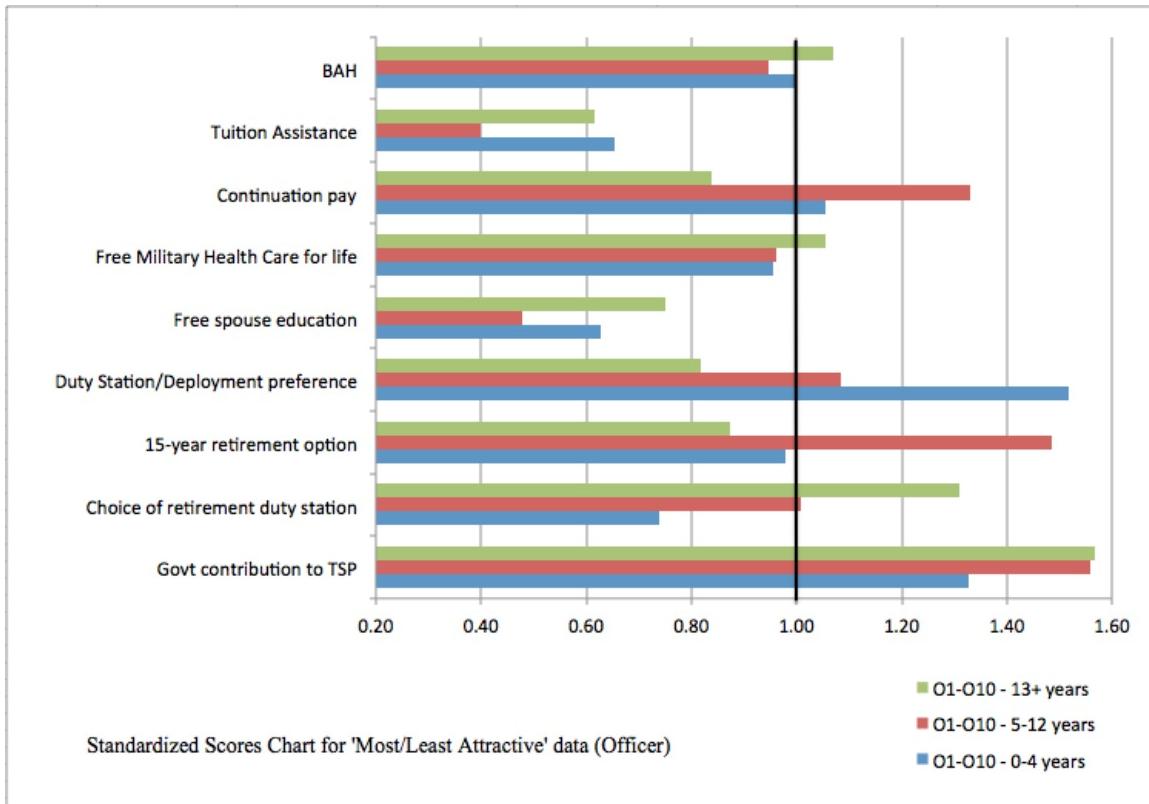


Figure 11. Most/Least Attractive Standardized Scores Chart (Officer)

Immediately notable in Figure 11 is the overwhelming difference found across all officer ranks in the TSP/401k retirement program; all ranks thought it much more important than the overall sample while junior and mid-career enlisted considered it less important. Also notable is the high difference found with the mid-level officers when viewing the ‘continuation pay’ factor. Duty station and deployment preference was received a noticeable difference for junior officers as well.

D. SUMMARY

This chapter identified the data and briefly discussed the results that were collected through the choice analysis survey that was conducted during our research. The data will be used to help analyze and answer the primary research questions. We consider the data collection process to be successful due to the large sample of the population that volunteered for the survey. Also, we were successful by safely encrypting and storing the data until it was used in the analysis portion of the research. We were also satisfied at the diverse audience that volunteered their time to take the survey and be part of our research. In the next chapter, we will discuss what we believe the data explains.

V. RESULTS OF CHOICE ANALYSIS AND CONCLUSIONS OF RESEARCH

A. OVERVIEW

In conducting this research, we have found valuable information that DoD leadership may use when considering changes to the military compensation system. We collected our data through surveys that were designed using an experimental orthogonal design theory. The surveys had two portions; each portion had a unique set of questions using a different method of analysis. In the first portion, which we called the concept comparison method, we created hypothetical concepts using eleven different factors with varying levels of attributes. We called the second set of questions the “Most/Least Attractive” portion of the survey. This design removed any factors relating to the defined monetary contribution of military retirement. We also removed all varying levels of attributes.

Overall, the data show that any changes to the compensation system may impact the perceived value of military compensation for our sample. We came to this conclusion by estimating utility levels for the individual incentive factors across six different segments. Next, we identified the range of differences between segments within each factor. As our team analyzed the results of the survey, we were able to draw a picture about the choices and decisions that Marines make when contemplating career benefit alternatives. We found that varying the attributes within factors had different results for each individual segment, but some factors had a higher level of utility for all.

In this chapter, we will further analyze the data and discuss what we believe the results mean. We will also present a decision support model that can be used to identify and compare different benefit packages to consider a perceived equitable compensation package for the force.

B. BACKGROUND

We received motivation to conduct research on changes to military compensation after finding that most research up to this point only analyzed cost savings. The organizations conducting these previous studies were tasked with identifying potential cost savings after the DoD announced its interest in changing the retirement and compensation system. Our team reviewed many of the recommendations that were provided to senior DoD officials and Congress, but most proposals only mentioned a form of reduced compensation or benefit system. It was our opinion that cost savings should not be the only quantifiable determination when examining potential benefits or ramifications to changes in the military compensation and retirement system. The possibility of an adverse impact to a

professional and all volunteer force is too great if changes are made without consulting the active duty military member.

A common recommendation amongst the research organizations was to simply change from a defined benefit to a defined contribution system. This means that the DoD would contribute a percentage of the military members' base pay to a 401k type of retirement fund. The military member would also be allowed to pay into the retirement in order to increase the retirement payout. This would replace the defined benefit system that pays a percentage of the Marine's base pay for the remainder of his life. We believed that making recommendations based only on monetary savings does not represent the active duty member's best interests, nor does it consider what drives a Marine to retain or retire from the Marine Corps.

Other non-monetary compensations that were suggested would reduce the DoD's retirement footprint in the military's budget. Some examples of these include increasing medical co-pays for retired military members and reducing base privileges such as diminished commissary and exchange services. Also, the retirement system would be changed to allow for earlier retirement; or if the member leaves the military before being eligible for retirement, he/she would then be able to transfer his 401k contributions to their new career. Our team focused on a wide-range of proposals and incorporated them, or a hybrid thereof, into our choice analysis survey with the intent of answering the questions found in Chapter One. Our goal was not to provide a cost analysis on how much the government could save by changing the military retirement system; instead, we wanted to provide data on the value or utility levels that service members place on various factors of the military compensation package.

C. CONCEPT COMPARISON

The concept comparison section of the survey introduced different attribute levels for each benefit factor. The attributes were different levels of compensation for both active duty forces and military retirees. Six choice sets were presented; each with two different hypothetical benefit packages that included varying attributes of all eleven factors. What we found was that the retirement payment factor was overwhelmingly the most important factor when our sample chose between concepts. This means that the monetary portion of retirement benefits is the most highly favored benefit of military service among the eleven factors that we tested. We believe that the utility found within this factor was high due to respondents choosing it as their heuristic that humans use when making complex choices.

In order to find more information, we standardized the data within each factor to uncover the difference in ranges across different segments of the sample. We were then able to tell which factor had a high amount of disagreement between segments for each factor. One story that we found to be the most interesting was that the current defined benefit retirement system was more important to senior Marines than it was to junior Marines. Similarly, the 401k type of defined contribution retirement system was more important to junior Marines than to senior Marines. We found this interesting because these are both a form of monetary retirement compensation. This information may identify a change in mentality with junior Marines with regards towards a more modern military retirement system. This data could mean that junior Marines may accept a defined contribution retirement system more willingly than senior Marines. This could be due to a younger generation that may want to be more in control of their retirement instead of simply receiving compensation based on time in service and rank upon retirement. Or it could simply mean that there are other factors that junior Marines consider important that could replace retirement pensions.

There was other information within the data that showed great differences in standardized measures of utility between segments. What this means to us is that factors that have a great range of percentage, i.e. tuition assistance with a range of 0.47 percent, have a great amount of disagreement between segments. In short, junior Marines care more about tuition assistance than senior Marines do. More information that we found interesting was that “choice of duty stations” was much more important to junior Marines than to senior Marines. Overall, we believe that these levels of importance may be used to identify factors and attributes that may partially replace the monetary portion of retirement, while also improving the attractiveness of the military compensation system.

D. MOST/LEAST ATTRACTIVE

The most/least attractive portion of the survey removed any attributes within factors and the retirement option. We conducted this research in order to simply determine what is important to Marines when the current retirement system is not an option. We once again created this portion of the survey utilizing choice analysis with questions that were presented in an orthogonally distinct manner. We expected to find a different response to similar questions that were asked during the concept comparison portion of the survey because the factor of pension based retirement was removed from the choice set.

What we found is that “free military health care for life” is perceived as the most attractive benefit of an active duty Marine compared to the others that were presented. This leads us to believe

that the Tricare system is perceived as the most attractive benefit of an active duty marine compared to the others that were presented, and significant changes to the system may have adverse effects. Also interesting is that “basic allowance for housing” was found to have a high amount of utility, coming in second to the “free military health care for life” factor. We believe the high utility found for BAH means that having a link to the civilian community and a place to call home may be more important to Marines than other factors such as “continuation pay”.

Another interesting story that this portion of the survey identifies is that the 401k/TSP retirement system is now more important to senior ranks than it is to junior ranks after removing the retirement pay option. This contradicts the concept comparison portion of the survey, where the 401k/TSP retirement system was less important to senior ranks than it was to junior ranks. We know that this contradiction between the two analyses evolved from the retirement pay option that was present in the concept comparison, but was not present in the most/least attractive section. What we find surprising is the reduced interest in this factor for the junior enlisted ranks. In theory, the 401k/TSP should have a higher utility for all segments, but there was a decrease in utility. These numbers can be explained by looking at the increased interest in other factors within the junior enlisted segment, but the logic is unexplained.

E. DECISION SUPPORT RESULTS

A decision support system is a group of scenarios that assist in the decision making process for businesses or organizations. A decision support model can be created utilizing data from factors and attributes, personal knowledge and strategy learned from other models. A properly made decision support model will process received data and output information that can assist the user in making the best decision. In our case, we built three different scenarios within a model by using the utility estimations from the concept comparison portion of the survey. These models have the capability of processing different levels of attributes within a factor and can output a best-case scenario. The best-case scenario can be in the form of a military compensation package for a specific segment, or if requested, a package for all segments combined. The results from our data show that a perfect package would be difficult to create; especially if the intent was to ensure that utility would be the same for all segments within each factor.

From the data we have collected, it is clear that decisions Marines have made in this study were heavily biased towards the “retirement pay” factor. We found differences in utility when utilizing the raw data during the concept comparison portion. We also found differences in agreements between

segments after standardizing the data within each factor. These variances identify a disagreement between the segments about the factor that may be used to the DoD's advantage when creating an attractive military compensation package. However, the DoD must understand the amount of utility that the active duty population views the current retirement system.

Retired military members that are currently enjoying the defined benefit package have an obvious bias to maintain the current system without change. We believe the DoD recognizes the necessity to create a "grandfather clause" that can be implemented if the compensation system changes. If a grandfather clause is not enacted and drastic changes to the retirement system occur, then we believe the data within our research identifies the significant amount of utility the DoD will need to replace with other factors in order to maintain an attractive compensation model. In order to assist in identifying required attributes needed to replace another factor within the study, we have created a decision support system.

The models we created can be modified with weights in what we call the desirability index. We designed the desirability index after reviewing a decision support model that was based off a previously made "willingness to pay" model. The desirability index can be best explained as a percentage of the absolute highest package for each segment. If the utility was maximized for each factor, the total desirability index would equal 100 percent, but each segment would have a different combination of maximum attributes to equal the 100 percent total. Below is a figure identifying the decision support results and demonstrates how the eleven factors and their associated attribute levels react for each of the three scenarios.

	Status Quo	Better pay	Better BAH, Tuition, Duty
Retirement Payment			
No retirement pension			
10% of base pay			
30% of base pay		X	X
50% of base pay	X		
Thrift Savings Plan			
No government contribution	X		
3% of base pay contributed in addition to pay			
5% of base pay contributed in addition to pay			
7% of base pay contributed in addition to pay		X	X
Continuation Bonus at 15 Years of Service			
No continuation base pay	X		
3 months of base pay		X	X
9 months of base pay			
18 months of base pay			
Separation Pay			
No separation pay	X		
1 year of base pay		X	X
2 years of base pay			
3 years of base pay			
Medical after military retirement			
No co-pay	X	X	X
5% Co-Pay for all servicemembers and dependents			
10% Co-Pay for all servicemembers and dependents			
15% Co-Pay for all servicemembers and dependents			
Post retirement insurance co-pay cap			
No co-pay	X	X	X
\$1,500 co-pay cap annually			
\$2,500 co-pay cap annually			
\$3,500 co-pay cap annually			
No co-pay cap			
Choice of duty stations			
No choice of future duty stations	X	X	
Choice of some future duty stations			X
Choice of all future duty stations			
Tuition Assistance			
Up to \$4500 a year	X	X	
Up to \$6500 a year			
Up to \$10500 a year			X
Basic Allowance for Housing			
BAH 10% lower than local cost of living		X	
BAH matches local cost of living	X		
BAH 10% higher than local cost of living			X
Future pay raises			
Lower than civilian wage pay raises			X
The same as civilian wage pay raises	X		
Higher than civilian wage pay raises		X	
Pay compared to civilian jobs requiring same level of experience and education			
Lower than civilian jobs			X
The same as civilian jobs	X		
Higher than civilian jobs		X	

Table 9. Decision Support Matrix Factors and Attributes Sample

The left hand column identifies the status quo, which we will measure the other two columns from and compare. The other two columns are scenarios that we created in order to research the possibility of a better compensation package. The “X” identifies the level of attribute of each factor that is used in each scenario. We shifted the “X” vertically within each factor, which changed the attribute level with the intent of making a more desirable package. Our intent was to make a package that was equally valued for each segment.

Overall, the first scenario that we generated based off participant's utility was the model that offered a combination of a reduced retirement payout combined with a high contributing TSP plan, continuation and separation bonuses, better BAH, Duty preference, and more Tuition Assistance (TA). When these factors were combined, the results identified that both early and mid-career Marines have an increase in utility when a package is created with more pay in relation to their civilian peers, more TA and some sort of duty station preference. This model is helpful in understanding that some of our sample may accept a combination of better pay, and a choice of duty station preference as compensation for reduced retirement payout. It was expected, and now proven with data, that later career Marines did not want to jeopardize the benefit of 50 percent base pay (the status quo) at retirement by choosing a separate incentive.

The second scenario we presented was called the "Better Pay" model. The theory was, if higher pay was provided earlier and throughout their career, then the choice of taking a reduction in retirement payout (30 percent from the 50 percent status quo in this scenario) may be more widely accepted by the segments. In this "Better Pay" model, the early and mid-career Marines were inclined to choose a better paying option in relation to their civilian peers thus giving up the status quo of a 50 percent payout, which is consistent with recommendations provided by the DoD. Paying a military member a higher amount than a civilian counterpart has potential to compensate for reduced retirement payout. This can be one option for DoD when considering a less expensive approach to military retirement. It is however significant to point out that having some percentage of one's base pay included in a compensation package is a choice that all participants of the study value.

The last scenario was simply the status quo, or the current system. We used the current model in order to provide a visual depiction of how all segments perceive the current system and how the other two choices compare to the status quo. The figures below show graphs that are the results of the desirability index for each of the three scenarios.

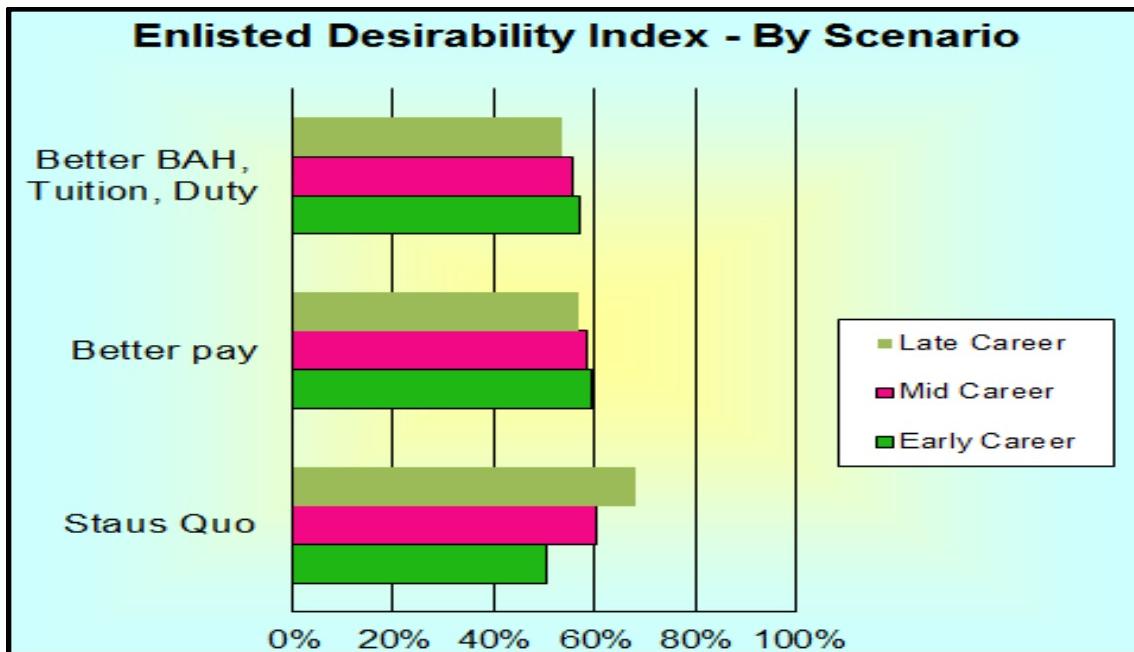


Figure 12. Desirability Index by Scenario (Enlisted)

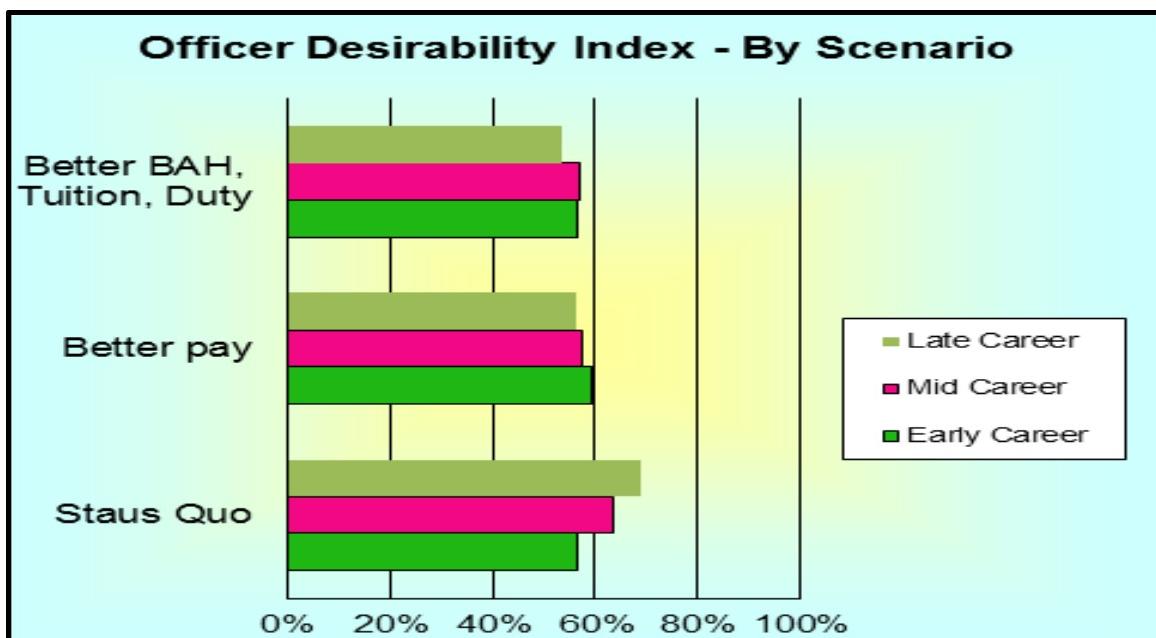


Figure 13. Desirability Index by Scenario (Officer)

The enlisted desirability index is very similar to the results of the Officer desirability shown in Figures 12 and 13, but we wanted to show both to ensure the reader has a visual depiction. The better pay scenario shows an increased utility for both the junior enlisted and officers, which nearly matches the status quo. Both mid-career and late career Marines have a decrease in utility and favor the status quo.

The next figures were created using the same data that was used in Figures 12 and 13, but are organized by segment. This shows a better depiction of how the midlevel and senior level Marines nearly mimic each other for all scenarios, but the junior enlisted differ slightly. Regardless, both junior enlisted and officers find the better pay scenario to be at least as attractive as the status quo.

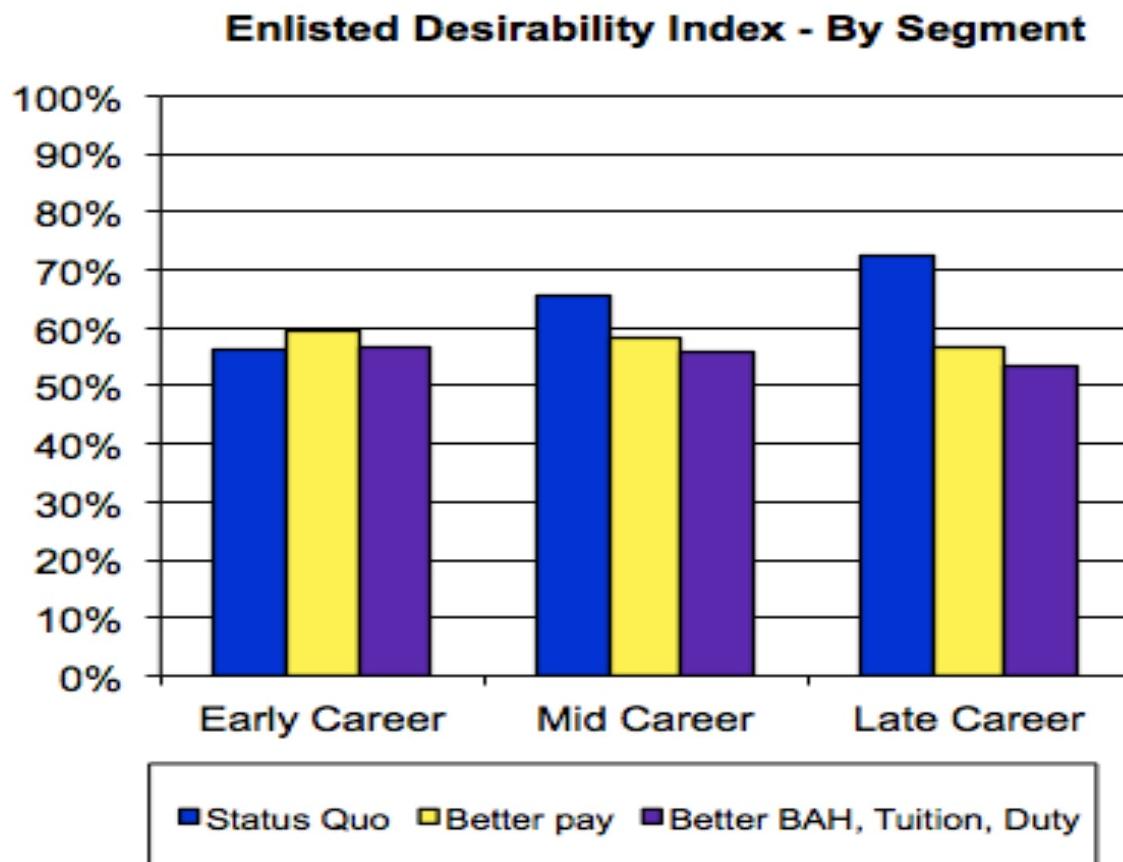


Figure 14. Desirability Index by Segment (Enlisted)

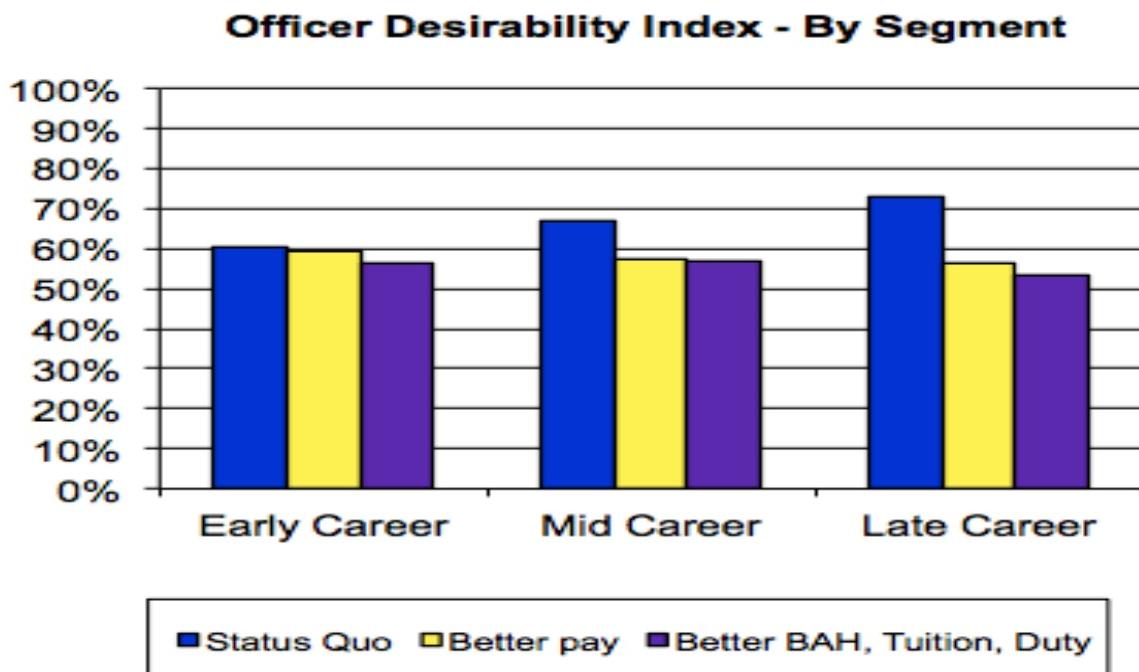


Figure 15. Desirability Index by Segment (Officer)

F. LIMITATIONS, CONSIDERATIONS AND FUTURE RESEARCH

During the conduct of our research, we became aware of some limitations. We identified the first limitation after the raw data collected during the concept comparison portion of the survey showed an overwhelmingly high utility for retirement payments. The driver for this high amount of utility can be explained by the large range in levels of attributes that we used for this particular factor. If similar research is conducted using these factors, we recommend that lower ranges of attributes are used for the retirement payment factor. We noticed the second limitation after identifying an inverse utility for junior Enlisted Marines when discussing Tricare co-pay attributes. We believe this was due to the lack of understanding of what a co-payment is as it relates to out of pocket medical expenses. We had a hyperlink that explained what potentially unfamiliar terms meant, but the junior respondents most likely did not research the term. We believe it would increase understanding if a more strategically placed explanation were included; stating that out of pocket expenses occur with co-payments would increase the understanding was available.

We recommend that additional research be conducted using choice analysis in order to obtain the optimal level of attributes within factors for the military compensation system. Optimal could best be described as providing the highest amount of utility in order to maintain an attractive compensation system, while reducing long term expenditures within the DoD. We strongly believe that additional

research is warranted and the results should be carefully considered before changes are made to the 50 year old military compensation package. We also strongly believe that military members who are currently active or retired should be given the option to continue in the current compensation system, or be moved to the new system.

From our research, we concede that many previous studies have made recommendations that are focused on the best monetary benefit for the DoD. We believe that our research has shed light on determining what military members view as important. We believe that military member's utility has not been sufficiently researched and recommend that future studies include the following:

1. Sample Larger Percentage of Active Duty Service Population Using Choice Analysis

While we are satisfied with the quantity and diversity of our sample, we believe that the "interaction effect", or the interaction between factors, should be studied. We believe that the choice heuristic may be more complex than the single factor that dominated the other factor choices. By analyzing a larger sample size with more, the two dominant factors can then be compared to identify how they move together. This analysis is more complex and requires a higher sample size, or more choices per participant. This will ensure that the population is analyzed and all segments within the population are recorded.

2. Sample Potential Candidates and Recruits from College and High School to Gather Their Expectations of a Compensation System

New generations of people have different ambitions, goals and utility levels than previous generations. Thus, understanding what drives potential candidates and recruits to consider the military is vital to shaping the force for the future. Utility levels of factors should be recorded and analyzed to ensure that any proposed military compensation system is attractive to future generations of military members. If a study of a population considering the military is conducted, then lessons learned and results from this thesis could be used as a model for their research.

3. Adjust Factors and Attributes of Future Choice Analysis Research

Additional research into what factors and attribute levels are important to the surveyed sample will create further understanding into what is truly important to active duty military members. Emphasis should be placed on ensuring that the factors and attribute levels are more realistic and less hypothetical as research progresses. If Congress identifies factors and attributes that it wishes to

change within the military contribution system, these factors and attributes should be analyzed in packages utilizing a decision support model similar to the model that was created during this thesis. The results can then help ensure that a benefit package is created utilizing the best scenario possible.

G. SUMMARY

Survey based choice analysis is an instrument that we believe has not been used in the past for determining military member preferences surrounding retirement and benefit systems. We believe that the choice analysis research conducted within this thesis has brought forward some information that may be valuable to decision makers within the DoD. We also believe that this data will provide value to those measuring utility of factors within military members, but more importantly can provide guidance about what potential changes may be acceptable to stakeholders. In the first chapter, we identified three questions that we hoped our research would answer.

The first question posed was to determine what factors drive retention, career designation and retirement within the Marine Corps for Marines at different levels of service. We believe our research answered this question by determining utility levels for eleven different factors and then finding the levels of difference between segments for each factor independently during the concept comparison portion of the research. We also researched and determined which factors were most and least important to segments after the retirement payout option was removed. We believe the data that was collected helps identify specific factors that drive choices concerning the military compensation system.

The second purpose of the study was to answer the question “does an equitable benefits package impact first-term Marines decision to retain or separate?” This question was partially answered by first identifying the utility levels for all factors presented. What we found is that junior Marines have different utility levels for the factors that were presented when compared to senior Marines. While our research did not identify a perfect benefits package for all segments that balances cost and high utility, we believe we have identified which factors have a high utility for junior Marines. With the decision support tool discussed earlier in this chapter, we were able to create a package that was as appealing as the status quo to junior Marines, even with a reduced retirement payout. We recommend that this tool be used to continue the approaches outlined and apply them when overhauling the military’s retirement system.

The final question strived to predict effects to the Marine Corps if there is a change to the career benefits compensation package. Answering this question at the conclusion of our research is not simple. There are too many variables to consider when answering this question that we did not predict

when creating the questions. What we can answer is that if changes are made to the military compensation system, then utility levels for each segment will change throughout all factors. Some utility levels will increase for certain segments, while others will decrease. If the DoD simplifies its approach to changing the compensation system by modifying the retirement payout to defined contribution only, we believe that other attribute levels between factors will need to be changed to offset lowered utility.

One of the main results found is that there is a wide variation in the results across segments. This indicates that a single “perfect” package would be difficult to attain, yet an acceptable package geared towards only junior Marines is attainable. For this reason, we recommend that any newly implemented compensation package either be phased in with new recruits/candidates, or is provided as a choice for active duty Marines. Active duty Marines that do not choose the new compensation package could then be phased out of the military and not forced into the new system. If Congress accurately anticipates the changes required for factors and attributes within the affected segments, then we believe the effects of modifying the military compensation system will be negligible.

We initially suspected that any change to the system would have an adverse impact; however through this research, we have discovered negative impacts may be reduced with careful consideration of military member’s utility levels and by ensuring that Marine’s choices are a higher priority than fiscal savings.

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APPENDIX

SURVEY EXAMPLE



Introduction: You are invited to participate in a research study entitled "Career Benefit Preferences of Marines." The purpose of this research is to better understand what choice factors drive a Marine's decision to retire or remain in the Marine Corps. This research will help identify how Marines prioritize retention benefits that may impact potential changes in the military retirement system and career incentive packages.

Procedures: The survey should take you approximately 10-20 minutes. You will be asked to answer general survey questions and to express your preference between different hypothetical career benefit options. We are trying to recruit a minimum of 250 volunteers to complete this survey. This survey uses tested procedures and no audio or video will be recorded during the conduct of this survey.

Location: The survey will take place via the internet at a private location of your choosing.

Cost: There is no cost to participate in this research study.

Voluntary Nature of the Study: Your participation in this study is voluntary. If you choose to participate, you can change your mind at any time and withdraw from the study. If you choose to withdraw, you will not be penalized in any way. The alternative to participating in this research is simply not participating in the research at all.

Please click the "Right Arrow" to continue.



0%  100%

A horizontal progress bar with a dark blue segment on the left labeled '0%' and a gray segment on the right labeled '100%', with a small dark blue square in the center gap.



Potential Risks and Discomforts: Physical risks to the individual participant are extremely minimal due to the nature of the study being an online survey. Psychological impacts on volunteers for this study may vary, though the risks are very low.

No economical or legal risks are imposed on any person volunteering for this study.

Anticipated Benefits: Anticipated benefits from this study for senior Marine Corps and DoD decision-makers include: 1) better understanding of the factors that affect decisions made by Marines regarding military retention or retirement and 2) show a preference order of factors that policy makers can use in their decision making to weigh future compensation benefits of Marines.

Subjects of this study may not directly benefit from this study; however, results of this analysis could positively affect career benefit choices offered in the future.

Compensation for Participation: No tangible compensation will be given.

Confidentiality & Privacy Act: Any information that is obtained during this study will be kept confidential to the full extent permitted by law. At no point in the survey will you be asked for personal identifiable information such as name, id number, etc.; participation in this study is anonymous.

Information from this study will be collected, stored and administered by a contractor and will be destroyed after the study is complete. All of the information is online and secured with encryption protection for security.

Please click the "Right Arrow" to continue.



0%  100%



Points of Contact: If you have any questions or comments about the research or have questions about any discomforts that you experience while taking part in this study, please contact the Principal Investigator, Dr. Mike Dixon at 831-656-2187 or mjdixon@nps.edu. Questions about your rights as a research subject or any other concerns may be addressed to the Navy Postgraduate School IRB chair, Dr. Larry Shattuck at 831-656-2743 or lgshattu@nps.edu.

Statement of Consent: I have read the information provided above. I have been given the opportunity to ask questions and all the questions have been answered to my satisfaction. I can print or save a copy of this form for my records by clicking below. By clicking the "I consent to participate in this study" button below I agree to participate in this study. I understand that by agreeing to participate in this research I do not waive any of my legal rights.

[Click here to open and print consent form](#)

Sincerely,

Mike Dixon, PhD
Professor, Graduate School of Business and Public Policy
Naval Postgraduate School

I consent to participate in this study

I do not consent to participate in this study

Please click the "Right Arrow" to continue.



0% 100%



On next few screens we will show you a small list of military benefit choices. On each screen we would like you to indicate the military incentive that you consider most attractive and least attractive for your personal or career progression.

Please remember there is no right or wrong answers. We are only interested in knowing about your relative preferences.

Please click the "Right Arrow" to continue.



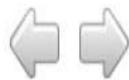
0%  100%



Considering only the following military benefits, please indicate the one that is **Most Attractive** and the one that is **Least Attractive** to you.

Most Attractive		Least Attractive
<input type="radio"/>	Tuition Assistance	<input type="radio"/>
<input type="radio"/>	Government contributions to the Thrift Savings Plan	<input type="radio"/>
<input type="radio"/>	Duty Station and Deployment preference	<input type="radio"/>
<input type="radio"/>	Free spouse education	<input type="radio"/>

Screen 1 of 6



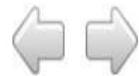
0%  100%



Considering only the following military benefits, please indicate the one that is **Most Attractive** and the one that is **Least Attractive** to you.

Most Attractive		Least Attractive
<input type="radio"/>	15-year retirement option	<input type="radio"/>
<input type="radio"/>	Duty Station and Deployment preference	<input type="radio"/>
<input type="radio"/>	Continuation pay, aviation continuation pay, etc.	<input type="radio"/>
<input type="radio"/>	Free Military Health Care for life	<input type="radio"/>

Screen 2 of 6



0%  100%

A horizontal progress bar consisting of a dark blue segment on the left and a gray segment on the right, with "0%" at the start and "100%" at the end.



Considering only the following military benefits, please indicate the one that is **Most Attractive** and the one that is **Least Attractive** to you.

Most Attractive		Least Attractive
<input type="radio"/>	Basic Allowance for Housing (BAH)	<input type="radio"/>
<input type="radio"/>	Free spouse education	<input type="radio"/>
<input type="radio"/>	Free Military Health Care for life	<input type="radio"/>
<input type="radio"/>	15-year retirement option	<input type="radio"/>

Screen 3 of 6



0%  100%

A horizontal progress bar with a dark blue segment on the left labeled "0%" and a light grey segment on the right labeled "100%".



Considering only the following military benefits, please indicate the one that is **Most Attractive** and the one that is **Least Attractive** to you.

Most Attractive		Least Attractive
<input type="radio"/>	Choice of a retirement, "Twilight" duty station	<input type="radio"/>
<input type="radio"/>	15-year retirement option	<input type="radio"/>
<input type="radio"/>	Government contributions to the Thrift Savings Plan	<input type="radio"/>
<input type="radio"/>	Basic Allowance for Housing (BAH)	<input type="radio"/>

Screen 4 of 6



0%  100%

A horizontal progress bar with a blue segment on the left labeled "0%" and a grey segment on the right labeled "100%", indicating the current screen number.



Considering only the following military benefits, please indicate the one that is **Most Attractive** and the one that is **Least Attractive** to you.

Most Attractive		Least Attractive
<input type="radio"/>	Tuition Assistance	<input type="radio"/>
<input type="radio"/>	Basic Allowance for Housing (BAH)	<input type="radio"/>
<input type="radio"/>	Choice of a retirement, "Twilight" duty station	<input type="radio"/>
<input type="radio"/>	Continuation pay, aviation continuation pay, etc.	<input type="radio"/>

Screen 5 of 6



0%  100%

A horizontal progress bar consisting of a dark blue segment on the left labeled "0%" and a gray segment on the right labeled "100%", with a thin white vertical line between them.



Considering only the following military benefits, please indicate the one that is **Most Attractive** and the one that is **Least Attractive** to you.

Most Attractive		Least Attractive
<input type="radio"/>	Duty Station and Deployment preference	<input type="radio"/>
<input type="radio"/>	Free Military Health Care for life	<input type="radio"/>
<input type="radio"/>	Tuition Assistance	<input type="radio"/>
<input type="radio"/>	Government contributions to the Thrift Savings Plan	<input type="radio"/>

Screen 6 of 6



0%  100%



Thank you for your answers so far. On the next few screens we have prepared some creative, hypothetical scenarios for you to evaluate.

On each screen you will find descriptions of different hypothetical career benefit systems, each with its particular characteristics related to how military members would benefit from the system.

Based only on your own preferences, desires and long-term goals, which of the choices would you choose? If you don't like either choice, you may choose "Neither". Remember, the choices you are about to see are only hypothetical and are not intended to depict actual benefit packages; however, choose the package that seems most appealing to you.

Please click the "Right Arrow" to continue.



0%  100%



Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented." [Click here to see the definition of some terms.](#)

	<u>Concept 1</u>	<u>Concept 2</u>	
Retirement Payment	30% of base pay	No retirement pension	
Thrift Savings Plan / 401k	5% of base pay contributed in addition to pay	3% of base pay contributed in addition to pay	
Continuation Bonus at 15 Years of Service	No continuation base pay	18 months of base pay	
Separation Pay	No separation pay	1 year of base pay	
Medical after military retirement	10% Co-Pay for all servicemembers and dependents	5% Co-Pay for all servicemembers and dependents	
Post retirement insurance co-pay cap	\$2,500 co-pay cap annually	\$3,500 co-pay cap annually	
Choice of duty stations	No choice of future duty stations	Choice of some future duty stations	
Tuition Assistance	Up to \$10,500 a year	Up to \$6,500 a year	
Basic Allowance for Housing	BAH 10% higher than local cost of living	BAH 10% lower than local cost of living	
Future pay raises	The same as civilian wage pay raises	Higher than civilian wage pay raises	
Pay compared to civilian jobs requiring same level of experience and education	The same as civilian jobs	Lower than civilian jobs	

I would choose
Concept 1

I would choose
Concept 2

Neither

Screen 1 of 8



0% 100%

Glossary

Retirement Pay: Retirement pay is a pension program in which service members receive a portion of their base pay for life after retirement.

Thrift Savings Plan / 401k: The Thrift Savings Plan is a defined contribution retirement savings plan for Federal employees. Under these types of benefits the government will contribute a percentage of the service members pay into a savings account intended for retirement. A government contribution is in addition to the regular pay that a service member would get; it does not come out of a service member's paycheck. At retirement you would then draw from the contributions and any interest that was earned over the years. Service members are able to decide how the contributions in their account are invested.

Continuation Bonus: A lump sum payment at 15 years of service for continued active duty service.

Separation Pay: A lump sum cash payment at retirement; only paid if service member makes it to full retirement requirements.

Co-pay: A co-pay is a fee that service members would pay to a medical provider to use medical services. The co-pay in these choices is a percentage of the cost of the procedure. No co-pay means that there would be no cost to a service member to use medical services.

Co-pay cap: The maximum amount that an individual will pay annually towards a co-pay is limited by a dollar amount. Once the annual co-pay limit is reached, service members will not be required to pay additional co-pay.

Tuition Assistance: Service members receive up to 100% of tuition and fees associated with college course taken, paid only up to a certain amount each year.

Basic Allowance of Housing: The intent of BAH is to provide uniformed servicemembers accurate and equitable housing compensation based on housing costs in local civilian housing markets, and is payable when government quarters are not provided.



Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented. [Click here to see the definition of some terms.](#)

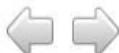
	<u>Concept 1</u>	<u>Concept 2</u>
Retirement Payment	No retirement pension	10% of base pay
Thrift Savings Plan / 401k	No government contribution	7% of base pay contributed in addition to pay
Continuation Bonus at 15 Years of Service	3 months of base pay	9 months of base pay
Separation Pay	2 years of base pay	3 years of base pay
Medical after military retirement	15% Co-Pay for all servicemembers and dependents	10% Co-Pay for all servicemembers and dependents
Post retirement insurance co-pay cap	\$1,500 co-pay cap annually	No co-pay cap
Choice of duty stations	Choice of all future duty stations	No choice of future duty stations
Tuition Assistance	Up to \$4,500 a year	Up to \$6,500 a year
Basic Allowance for Housing	BAH 10% lower than local cost of living	BAH matches local cost of living
Future pay raises	Higher than civilian wage pay raises	Lower than civilian wage pay raises
Pay compared to civilian jobs requiring same level of experience and education	Higher than civilian jobs	Lower than civilian jobs

I would choose
Concept 1

I would choose
Concept 2

Neither

Screen 2 of 8



0% 100%



Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented." [Click here to see the definition of some terms.](#)

	<u>Concept 1</u>	<u>Concept 2</u>	
Retirement Payment	50% of base pay	No retirement pension	
Thrift Savings Plan / 401k	7% of base pay contributed in addition to pay	No government contribution	
Continuation Bonus at 15 Years of Service	18 months of base pay	9 months of base pay	
Separation Pay	3 years of base pay	2 years of base pay	
Medical after military retirement	5% Co-Pay for all servicemembers and dependents	No co-pay	
Post retirement insurance co-pay cap	\$2,500 co-pay cap annually	No co-pay	
Choice of duty stations	Choice of all future duty stations	Choice of some future duty stations	
Tuition Assistance	Up to \$6,500 a year	Up to \$10,500 a year	
Basic Allowance for Housing	BAH 10% higher than local cost of living	BAH 10% lower than local cost of living	
Future pay raises	The same as civilian wage pay raises	Lower than civilian wage pay raises	
Pay compared to civilian jobs requiring same level of experience and education	The same as civilian jobs	Lower than civilian jobs	

I would choose
Concept 1

I would choose
Concept 2

Neither

Screen 3 of 8



0%  100%



Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented." [Click here to see the definition of some terms.](#)

	<u>Concept 1</u>	<u>Concept 2</u>
Retirement Payment	10% of base pay	30% of base pay
Thrift Savings Plan / 401k	3% of base pay contributed in addition to pay	5% of base pay contributed in addition to pay
Continuation Bonus at 15 Years of Service	9 months of base pay	No continuation base pay
Separation Pay	No separation pay	1 year of base pay
Medical after military retirement	10% Co-Pay for all servicemembers and dependents	No co-pay
Post retirement insurance co-pay cap	\$1,500 co-pay cap annually	No co-pay
Choice of duty stations	No choice of future duty stations	Choice of some future duty stations
Tuition Assistance	Up to \$10,500 a year	Up to \$4,500 a year
Basic Allowance for Housing	BAH 10% lower than local cost of living	BAH matches local cost of living
Future pay raises	The same as civilian wage pay raises	Higher than civilian wage pay raises
Pay compared to civilian jobs requiring same level of experience and education	Higher than civilian jobs	The same as civilian jobs

I would choose
Concept 1

I would choose
Concept 2

Neither

Screen 4 of 8



0% 100%



Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented." [Click here to see the definition of some terms.](#)

	<u>Concept 1</u>	<u>Concept 2</u>
Retirement Payment	10% of base pay	No retirement pension
Thrift Savings Plan / 401k	5% of base pay contributed in addition to pay	3% of base pay contributed in addition to pay
Continuation Bonus at 15 Years of Service	3 months of base pay	No continuation base pay
Separation Pay	3 years of base pay	1 year of base pay
Medical after military retirement	15% Co-Pay for all servicemembers and dependents	5% Co-Pay for all servicemembers and dependents
Post retirement insurance co-pay cap	\$3,500 co-pay cap annually	\$2,500 co-pay cap annually
Choice of duty stations	Choice of all future duty stations	Choice of some future duty stations
Tuition Assistance	Up to \$4,500 a year	Up to \$6,500 a year
Basic Allowance for Housing	BAH matches local cost of living	BAH 10% lower than local cost of living
Future pay raises	Lower than civilian wage pay raises	Higher than civilian wage pay raises
Pay compared to civilian jobs requiring same level of experience and education	Lower than civilian jobs	Higher than civilian jobs

I would choose
Concept 1

I would choose
Concept 2

Neither

Screen 5 of 8



0%  100%



Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented." [Click here to see the definition of some terms.](#)

	Concept 1	Concept 2
Retirement Payment	50% of base pay	30% of base pay
Thrift Savings Plan / 401k	7% of base pay contributed in addition to pay	No government contribution
Continuation Bonus at 15 Years of Service	18 months of base pay	3 months of base pay
Separation Pay	1 year of base pay	2 years of base pay
Medical after military retirement	No co-pay	10% Co-Pay for all servicemembers and dependents
Post retirement insurance co-pay cap	No co-pay	No co-pay cap
Choice of duty stations	Choice of some future duty stations	No choice of future duty stations
Tuition Assistance	Up to \$4,500 a year	Up to \$6,500 a year
Basic Allowance for Housing	BAH matches local cost of living	BAH 10% higher than local cost of living
Future pay raises	Lower than civilian wage pay raises	Higher than civilian wage pay raises
Pay compared to civilian jobs requiring same level of experience and education	Lower than civilian jobs	Higher than civilian jobs

I would choose
Concept 1

I would choose
Concept 2

Neither

Screen 6 of 8



0%  100%



Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented." [Click here to see the definition of some terms.](#)

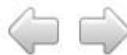
	<u>Concept 1</u>	<u>Concept 2</u>
Retirement Payment	No retirement pension	50% of base pay
Thrift Savings Plan / 401k	7% of base pay contributed in addition to pay	5% of base pay contributed in addition to pay
Continuation Bonus at 15 Years of Service	No continuation base pay	18 months of base pay
Separation Pay	No separation pay	2 years of base pay
Medical after military retirement	5% Co-Pay for all servicemembers and dependents	15% Co-Pay for all servicemembers and dependents
Post retirement insurance co-pay cap	\$3,500 co-pay cap annually	\$1,500 co-pay cap annually
Choice of duty stations	Choice of all future duty stations	No choice of future duty stations
Tuition Assistance	Up to \$10,500 a year	Up to \$6,500 a year
Basic Allowance for Housing	BAH 10% higher than local cost of living	BAH 10% lower than local cost of living
Future pay raises	The same as civilian wage pay raises	Lower than civilian wage pay raises
Pay compared to civilian jobs requiring same level of experience and education	Lower than civilian jobs	The same as civilian jobs

I would choose
Concept 1

I would choose
Concept 2

Neither

Screen 7 of 8



0%  100%



Assume that you have only the following career benefit systems to choose from, please indicate **which of the choices you would prefer** (you may also indicate "neither"). You may assume that any criteria not specified below is the same for each alternative presented." [Click here to see the definition of some terms.](#)

	Concept 1	Concept 2
Retirement Payment	10% of base pay	30% of base pay
Thrift Savings Plan / 401k	No government contribution	3% of base pay contributed in addition to pay
Continuation Bonus at 15 Years of Service	9 months of base pay	3 months of base pay
Separation Pay	No separation pay	3 years of base pay
Medical after military retirement	10% Co-Pay for all servicemembers and dependents	No co-pay
Post retirement insurance co-pay cap	\$1,500 co-pay cap annually	No co-pay
Choice of duty stations	Choice of some future duty stations	Choice of all future duty stations
Tuition Assistance	Up to \$4,500 a year	Up to \$10,500 a year
Basic Allowance for Housing	BAH 10% higher than local cost of living	BAH matches local cost of living
Future pay raises	The same as civilian wage pay raises	The same as civilian wage pay raises
Pay compared to civilian jobs requiring same level of experience and education	Higher than civilian jobs	Lower than civilian jobs

I would choose
Concept 1

I would choose
Concept 2

Neither

Screen 8 of 8



0% 100%



Thank you for your responses so far. We're almost done!

This last section of the survey contains questions about you. We will use the responses to these questions to analyze responses of various groups of service members. Again we assure you that your privacy will be protected.

Please click the "Right Arrow" to continue.



0%  100%

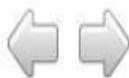
A horizontal progress bar with a blue segment on the left labeled "0%" and a gray segment on the right labeled "100%".



What is your military pay grade?

- E1-E3
 - E4-E5
 - E6-E9
 - O1-O3
 - O4-O6
 - O7-O10
-

Select one answer and click the "Right Arrow" to continue.



0%  100%



What is your military Time In Service (TIS)?

- 0-4 years
 - 5-8 years
 - 9-12 years
 - 13-16 years
 - 17-19 years
 - 20 years or more
-

Select one answer and click the "Right Arrow" to continue.



0%  100%



What is your age?

- 17-24 years old
 - 25-31 years old
 - 32-39 years old
 - 40-46 years old
 - 47-54 years old
 - 55 years and over
-

Select one answer and click the "Right Arrow" to continue.





What is the highest level of education you have completed?

- Some high school
 - High school graduate
 - Some college
 - Trade/technical/vocational training
 - College graduate
 - Some postgraduate work
 - Post graduate degree
-

Select one answer and click the "Right Arrow" to continue.



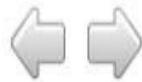
0%  100%



What is your marital status?

- Single, never married
 - Married or domestic partnership
 - Widowed
 - Divorced
 - Separated
-

Select one answer and click on the "Right Arrow" to continue.



0%  100%



We have reached the end of the survey.

Thank you again for your time and cooperation. You may close this window.



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